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THE GIFT OF
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CATALOGUE
OF
WASHINGTON UNIVERSITY



1904-1905

AND
ANNOUNCEMENTS, 1905-1906

PUBLISHED BY THE UNIVERSITY,
ST. LOUIS:
1905.

1905.

1906.

UNIVERSITY CALENDAR.

1904—1905.

ENTRANCE EXAMINATION to the Undergraduate Department, Tuesday and Wednesday, September 20-21, 1904.

ENTRANCE EXAMINATION to the Law School, Tuesday, September 20.

ENTRANCE EXAMINATION to the Medical College, Tuesday and Wednesday, September 20-21.

ENTRANCE EXAMINATION to the Dental College, Tuesday and Wednesday, September 27-28.

SCHOOL OF FINE ARTS opens Monday, September 26.

UNDERGRADUATE DEPARTMENT opens Thursday, September 22.

LAW SCHOOL opens Thursday, September 22.

MEDICAL COLLEGE opens Thursday, September 22.

DENTAL COLLEGE opens Monday, October 3.

HOLIDAY, Thanksgiving Day, Thursday, November 24.

VACATION, December 23, 1904, to January 2, 1905, inclusive.

FIRST TERM ends Saturday, January 28.

SECOND TERM begins Monday, January 30.

HOLIDAY, Washington's Birthday, Wednesday, February 22.

HOLIDAY, Good Friday, April 21.

COMMENCEMENT, Dental College, Thursday, May 2.

COMMENCEMENT, Medical College, Thursday, May 25.

UNIVERSITY HOLIDAY, Friday, May 12.

EXHIBITION OF WORK of School of Fine Arts, June 13-15.

ENTRANCE EXAMINATION to the Undergraduate Department, Monday and Tuesday, June 12-13.

COMMENCEMENT, Law School and Undergraduate Department, Thursday, June 15.

VACATION, June 16 to September 28.

Wash. Univ. 7-12-09

1905—1906.

ENTRANCE EXAMINATION to the Undergraduate Department,
Tuesday and Wednesday, September 26-27, 1905.

ENTRANCE EXAMINATION to the Law School for advanced
standing, Tuesday, September 26.

ENTRANCE EXAMINATION to the Medical College, Tuesday
and Wednesday, September 26-27.

ENTRANCE EXAMINATION to the Dental College, Friday and
Saturday, September 29-30.

SCHOOL OF FINE ARTS opens Monday, September 25.

UNDERGRADUATE DEPARTMENT opens Thursday, September 28.

LAW SCHOOL opens Thursday, September 28.

MEDICAL COLLEGE opens Thursday, September 28.

DENTAL COLLEGE opens Monday, October 2.

HOLIDAY, Thanksgiving Day, Thursday, November 30.

VACATION, December 22, 1905, to January 1, 1906, inclusive.

FIRST TERM ends Saturday, February 3.

SECOND TERM begins Monday, February 5.

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GENERAL STATEMENT.

On the 22nd of February, 1853, at the instance of Wayman Crow, Esq., a member of the State Senate, the Legislature of Missouri granted a charter to an educational institution to be located in the city of St. Louis, and to bear the name of *Eliot Seminary*, in honor of the Rev. William G. Eliot of St. Louis.

The charter, which was a most liberal one, was to be perpetual and no limitations of any sort were imposed, excepting those which forbade any sectarian or partisan instruction. The first meeting of the Directors named in the charter of incorporation was held on the 22nd of February, 1854. In deference to the wishes of the Rev. Dr. Eliot, the name of the institution was changed. The charter having been granted on the 22nd of February, the birthday of Washington, the meeting of the Board of Directors for organization having also occurred on this same anniversary, the name of the institution was changed from *Eliot Seminary* to *Washington Institute*, which in 1857 became, by a change in the charter, *Washington University*. It seemed to the founders that the name was significant of the character of the institution which they sought to found. The first Board of Directors was composed of seventeen well-known influential citizens of St. Louis, who were named in the charter, and who were given the power to fill vacancies in their number caused by death or resignation.

The first educational work done under the charter of 1853 was the opening of an evening school for boys, in a building on Sixth street, during the winter of 1854-5. This school was called the "O'Fallon Polytechnic Institute," in honor of Colonel John O'Fallon, for years one of the University Directors, and was in charge of Messrs. Jeremiah D. Low and Nathan D. Tyrrell. This evening school and a day school, which had been in operation for some time before this period, were carried on together by the same teachers until in September, 1856, a building on Seventeenth street was completed and occupied by the day school. The evening school was sustained for several years by the University, until by special arrangement the entire care of this school was assumed by the Public School Board. This school on Seventeenth street, the forerunner of the present Smith Academy, now a secondary school of the University, was the real beginning of Washington University.

The formal inauguration of the University took place on the 23d of April, 1857. The leading feature of its exercises was an oration by the Hon. Edward Everett of Massachusetts, upon "Academic Education," delivered in Mercantile Library Hall. Later in the year a building was erected for the chemical laboratory. In the next year the organization of the College was completed and the first College degrees were granted in 1862.

The east wing of the main building on Washington avenue and Seventeenth street, recently abandoned by the University, of which the academic building formed the south wing, was erected in 1858 and used for Col-

lege classes, and the west wing was added in 1871 and devoted to the uses of the Polytechnic School.

In the meantime the University had been growing, adding new departments, and receiving additional endowments. The Law School was organized in 1867; the Polytechnic School, now known as the School of Engineering and Architecture, in 1870; the School of Fine Arts in 1879; the School of Botany in 1885. The St. Louis Medical College, founded in 1842, was admitted as a department of the University in 1891, and the Missouri Dental College in 1892. In 1899 the Missouri Medical College, which was founded in 1840, was united with the St. Louis Medical College to form the Medical Department of Washington University.

In 1879 the Academy, which was the first school in operation under the charter, left the old building on Seventeenth street and Washington avenue to enter a new building on Nineteenth street and Washington avenue, erected by funds which came to the Chancellor from James and Persis Smith, and the school has since been known as Smith Academy, in their honor. Mary Institute, a school for girls, was organized in 1859, and the Manual Training School in 1879.

In 1894 a tract of land was purchased just outside the city limits, northwest of Forest Park, of which the University now owns 113 acres. The generosity of citizens of St. Louis made it possible to adopt plans for building and to begin work at once. Eleven buildings have been erected and the new site was taken possession of by the University January 30, 1905.

The Board of Directors has provided that the equipment of every department shall be steadily and rapidly augmented, and that the faculty of the Undergraduate Department shall be considerably increased. All these provisions have greatly extended the usefulness of the institution and the opportunities which are placed before the students.

WASHINGTON UNIVERSITY

COMPREHENDS:

I. UNDERGRADUATE DEPARTMENT:

INCLUDING THE COLLEGE AND SCHOOL OF ENGINEERING AND
ARCHITECTURE.

West of Forest Park.

II. HENRY SHAW SCHOOL OF BOTANY.

West of Forest Park.

III. ST. LOUIS SCHOOL OF FINE ARTS.

Nineteenth and Locust Streets,

IV. ST. LOUIS LAW SCHOOL.

*1417 Locust Street.

V. MEDICAL DEPARTMENT.

1806 Locust Street.

VI. MISSOURI DENTAL COLLEGE.

Twenty-seventh and Locust Streets.

*The Law School will, in September, 1905, take possession of the building on the corner of Locust and Twenty-ninth Streets, recently occupied by the Washington University Club.

The following schools have also been organized under the charter of the University:—

I. SMITH ACADEMY.

Washington Avenue and Nineteenth Street.

CHARLES PAINE CURD, A.M., Ph.D., Principal.

II. MARY INSTITUTE.

Lake and McPherson Avenues.

EDMUND HAMILTON SEARS, A.M., Principal.

III. MANUAL TRAINING SCHOOL.

Washington Avenue and Eighteenth Street.

CALVIN MILTON WOODWARD, Ph.D., Director.

For particulars in regard to these schools see special catalogues to be had on application to the Principals or Director.

Note.—It is expected that Smith Academy and the Manual Training School will, in September, 1905, occupy new buildings now in process of erection upon a large lot of land recently purchased on Von Versen Avenue, west of Union Avenue.

UNDERGRADUATE DEPARTMENT.

THE COLLEGE.

**THE SCHOOL OF ENGINEERING AND
ARCHITECTURE.**

UNDERGRADUATE DEPARTMENT.

**INCLUDING THE COLLEGE AND THE SCHOOL OF ENGINEERING
AND ARCHITECTURE.**

WINFIELD SCOTT CHAPLIN, A.M., LL.D.,
Chancellor.

CALVIN MILTON WOODWARD, A.B., Ph.D.,
*Professor of Mathematics and Applied Mechanics, and Dean
of the School of Engineering and Architecture.*

MARSHALL SOLOMON SNOW, A.M.,
Professor of History, and Dean of the College.

FRANCIS EUGENE NIPHER, A.M.,
Professor of Physics.

WILLIAM TRELEASE, S.D., LL.D.,
Professor of Botany.

OTTO HELLER, Ph.D.,
Professor of the German Language and Literature.

EDWARD HARRISON KEISER, Ph.D.,
Professor of Chemistry.

JOHN LANE VAN ORNUM, C.E.,
Professor of Civil Engineering.

FREDERICK ALDIN HALL, A.M., Litt.D.,
Professor of Greek.

FREDERICK WILLIAM SHIPLEY, A.B., Ph.D.,
Professor of Latin.

ALEXANDER CHESSIN, A.M., C.E., Ph.D.,
Professor of Mathematics.

ARTHUR ONCKEN LOVEJOY, A.M.,
Professor of Philosophy.

ROBERT HEYWOOD FERNALD, M.E., A.M., Ph.D.,
Professor of Mechanical Engineering.

FREDERICK MAYNARD MANN, C.E., M.S.,
Professor of Architecture.

EDGAR JAMES SWIFT, Ph.D.,
Professor of Psychology and Pedagogy.

GASTON DOUAY, A.M.,
Professor of the French Language and Literature.

ALEXANDER SUSS LANGSDORF, B.S., M.M.E.,
Professor of Electrical Engineering.

HENRY CAPLES PENN, A.M.,
Professor of English.

GUSTAV HAMBACH, M.D.,
Adjunct Professor of Geology.

AMBROSE PARÉ WINSTON, Ph.D.,
Assistant Professor of Economics.

HOLMES SMITH,
Assistant Professor of Drawing.

SAMUEL MONDS COULTER, A.M., Ph.D.,
Assistant Professor of Botany.

JAMES FRANCIS ABBOTT, A.M.,
Assistant Professor of Zoölogy.

INSTRUCTORS.

SHERMAN LEAVITT, M.S.,
Instructor in Chemistry.

PHILIP ROSS GOODWIN, B.C.E.,
Instructor in Civil Engineering.

FRED HALE VOSE, B.M.E.,
Instructor in Mechanical Engineering.

LINDLEY PYLE, A.M.,
Instructor in Physics.

OSCAR FRANKLIN STEIDEMANN, B.S.,
Instructor in Chemistry.

ALFRED EWINGTON, A.M.,
Instructor in French.

WALTER ROBINSON SMITH, Ph.M.,
Instructor in American History.

ROBERT STINSON STARBIRD, A.B.,
Instructor in English.

GEORGE OSCAR JAMES, Ph.D.,
Instructor in Mathematics.

PAUL REIF, Ph.D.,
Instructor in German.

JAMES ARTHUR HARRIS, Ph.D.,
Instructor in Botany.

LOUIS CLEMENS SPIERING,
Instructor in Architecture.

ANDREW CREAMOR LIFE, A.M.,
Instructor in Botany.

HENRY KERR MCGOODWIN, B.S.,
Instructor in Architecture.

FRANK HENRY EWERHARDT,
Director of Physical Training.

LA RUE VAN HOOK, Ph.D.,
Instructor in Greek and Latin.

STUDENTS.

SENIOR CLASS.

NAMES.	COURSE.	RESIDENCE.
Aid, Adele	Arts	3660 Blaine av.
Allen, George Levis, Jr.	Mech.Eng.	26 Westmoreland pl.
Baltzer, Adolf	Arts	2506 Benton st.
Barnes, George	Arts	3754 Westminster pl.
Briggs, Charles Hibbard	Civ. Eng.	Marshall, Mo.
Cassell, Charles Herbert Louis	Mech.Eng.	6020 Horton pl.
Clayton, Sarah Sale	Arts	Kirkwood, Mo.
Culbertson, Stephen Roy	Civ. Eng.	1709 Cora av.
Cunningham, Ellen Elizabeth	Arts	3108 Bell av.
Dawson, Elma Nipher	Arts	Webster Groves, Mo.
Drosten, William George	Arts	2011 Park av.
Eliot, Samuel Ely	Arts	Portland, Oregon.
Grace, Mary Charity	Arts	3309 Easton av.
Graf, August Vincent	Arts	1327 S. 7th st.
Hawkins, Carl Leon	Civ. Eng.	4039 Page boul.
Hempelmann, Walter Leo	Chem.Eng.	1438 N. 9th st.
Holman, Mary	Arts	3744 Finney av.
Horner, Wesley Winans	Civ. Eng.	5056 Morgan st.
Kahn, Blanche	Arts	5807 Plymouth av.
Kargau, Theodore	Elec. Eng.	2839 Russell av.
Krause, Arno Dominic	Arts	5252 Vernon av.
Laichinger, John, Jr.	Mech.Eng.	3311 Lemp av.
Lamkey, Frank Denell	Mech.Eng.	2831 Easton av.
Moore, Thomas Philip	Arts	Creve Cœur, Mo.
Pickrell, Lotta Bell	Arts	3404 Morgan st.
Rehm, Norman Franklin	Elec. Eng.	4248 West Belle pl.
Saylor, Richard Morgan	Arts	3700 West Pine boul.
Schroeder, Herbert Spencer	Chem.Eng.	3887 Hartford st.
Schuyler, Montgomery	Civ. Eng.	2744 Russell av.
Shryock, Gertrude	Arts	5214 Maple av.
Skinker, Alexander Rives	Arts	4263 McPherson av.
Smith, Herbert Booth	Arts	Pattonville, St. Louis County.
Steinbreder, Harry John	Chem.Eng.	236 S. Newstead av.
		Total, 33.

JUNIOR CLASS.

NAMES.	COURSE.	RESIDENCE.
Ballman, Edwin	Elec. Eng.	3899 Delmar boul.
Beals, Louis N., Jr.	Civ. Eng.	3208 Morgan st.
Brown, William James	Civ. Eng.	5032 St. Louis av.
Butler, Archibald Reynolds	Mech.Eng.	6706 Virginia av.
Butler, Craig Ritchie	Elec.Eng.	6706 Virginia av.
Connor, Sadie Austin	Arts	2003 Alice av.
Day, Myra	Arts	306 N. Newstead av.
Dickinson, Ruth Bissell	Arts	5711 Cates av.
Ellison, Louise	Arts	3945 Washington boul.
Emanuel, Morris Cable	Civ. Eng.	4517 Maffitt av.
Gamble, Allan Preston	Civ. Eng.	5961 Plymouth av.
Gilbert, William Robert	Arts	1620 S. Grand av.
Gilster, John Frederick	Arts	Chester, Ill.
Hamilton, May	Arts	2329 St. Louis av.
Harris, Anna Leigh	Arts	Tuxedo Park, Mo.
Heimbuecher, Walter Alexander	Civ. Eng.	S. Kirkwood, Mo.
Henselmeier, Frederick William	Arts	1915 St. Louis av.
Hequembourg, Katherine Charlotte	Arts	3673 Russell av.
Heron, Grace	Arts	4302 West Belle pl.
Hoolan, Joanna	Arts	4542 Laclede av.
Kerley, Olive Alice	Arts	3929 Cleveland av.
Knoll, Mabel	Arts	Webster Groves, Mo.
Lamb, Harvey Densmore	Arts	6333 Vermont av.
Luccock, Halford Edward	Arts	3867 Delmar boul.
Luetscher, Oliver Percy	Chem.Eng.	4432 West Belle pl.
Paddock, Edward Fort	Chem.Eng.	4432 West Belle pl.
Pechman, Rose Marie	Arts	2845 Lucas av.
Sammelman, Sylverius	Civ. Eng.	1615 Locust st.
Schewe, William Henry	Civ. Eng.	5228 N. Broadway.
Steinbreder, Caroline Mary	Arts	236 S. Newstead av.
Stevens, Hirrel	Arts	4043 Juniata av.
Tensfeld, Anna Elizabeth	Arts	906 Rutger st.
Thompson, Clara Louise	Arts	946 Hamilton av.
Traber, Charles Kuno	Civ. Eng.	1215 Walton av.
Tuholske, Lister	Arts	2347 Locust st.
Wintermann, Oscar Joseph	Arts	3011 Hawthorne boul.
		Total, 35.

SOPHOMORE CLASS.

NAMES.	RESIDENCE.
Birkner, Erle J.	2832 Benton st.
Breaker, Ernest Robert	5751 Vernon av.
Bryan, Walter Edwin	2749 Garrison av.
Burke, Melville Alexander	715 N. Sarah st.
Burroughs, Mortimer Percy	4620 McPherson av.
Cave, Maury Clifton	3928 West Belle pl.
Clayton, Henry Helm	Kirkwood, Mo.
Corkins, Leonard Grimes	4600 Cook av.
Coulter, Cornelia Catlin	Fergusson, Mo.
Deahl, Edna Mathilde	7119 Emilie st.
Duncan, Robert Cole	3120 Locust st.
English, Fred Lewis	5285 Washington av.
Evans, Gomer Louis	2734 Rutger st.
Gallenkamp, Edward William, Jr.	Washington, Mo.
Garetson, Katherine Griffith	5540 Maple av.
Goodbar, Alvan Joy	3953 Westminster pl.
Gruner, Vida	3406 Hawthorne boul.
Hendrich, Walter Frederick	2805 Lafayette av.
Hueckel, William Clemence	Caseyville, Ill.
Kauffmann, Marie	3503 Texas av.
Kayser, Frieda Elizabeth	2322 S. Compton av.
Krause, Walter Gotfried	5252 Vernon av.
Lamar, Robert Wesley	7027 Mitchell av.
Lewald, Alfred	1403 Monroe st.
Liggett, William Edwin	Oswego, Kansas.
MacKinlay, Arthur Ralph	1376 Blackstone av.
Mezger, George, Jr.	3647 Ohio av.
O'Reilly, Louis Byrne	4498 Forest Park boul.
Patterson, Helen	Staunton, Ill.
Patton, Herbert M.	1365 Temple pl.
Poor, Herbert Emery	Kansas City, Mo.
Renwick, James Harvey	South Omaha, Neb.
Richardson, Preston Allen	4035 Virginia av.
Robinson, Frederic Morrison	4174 West Belle pl.
Ruebel, Daniel Adolph	Lexington, Mo.
Souther, George Herbert	4329 West Belle pl.
Stevens, Graham Cook	4043 Juniata st.
Stevens, James Allan	4043 Juniata st.
Weidmann, Walter Ernst	Belleville, Ill.
Whitmire, Carl Douglas	West Plains, Mo.
Williams, Rector Linde	Little Rock, Ark.

NAMES.	RESIDENCE.
Wright, Arthur Edwin	Kansas City, Mo.
Zimmerman, Elinor Carr	East St. Louis, Ill.
	Total, 43.

FRESHMAN CLASS.

Adkins, William H., Jr.	1714 Nebraska av.
Albers, Olga Rose	Webster Groves, Mo.
Alexander, Raymond Glime	4141 West Belle pl.
Allen, Samuel Holliday	26 Westmoreland pl.
Angert, Josephine F.	St. Charles, Mo.
Bartlett, Howard	3021 Eads av.
Bischoff, Eugene Daniel	2714 Russell av.
Bowen, Leon Roy	5951 Cote Brilliante av.
Bowles, Ora Verne	3223 Bell av.
Briell, Theodore Eugene	1923 Burd av.
Brill, Abraham	4212½ Evans av.
Brooks, Louis Joshua, Jr.	4061 Morgan st.
Bryan, Howard	3746 Windsor pl.
Burnet, Warren Andrew	6316 Michigan av.
Caldwell, James Guthrie, Jr.	East St. Louis, Ill.
Carnahan, Grace	Maryville, Tenn.
Chaffee, Roy Orestes	Maplewood, Mo.
Chamberlin, Edward Carter, Jr.	3119 Lucas av.
Colby, Vine	3934 Shenandoah av.
Delano, Francis Greason	De Soto, Mo.
Downes, Michael William	5112 Wells av.
Duffner, Bernard Anthon	4038 Gratiot st.
Eliot, Frank Munroe	5468 Maple av.
Evers, August George	1861 N. Market st.
Farrar, Benedict	4523 West Pine boul.
Fisher, Brownlee	761 Walton av.
Frerichs, Frederick William, Jr.	4608 S. Broadway.
Fritschle, Melvin Charles	5000 Gravois av.
Fullerton, Hugh Mitchell	3425 Bell av.
Garrels, Adele	1830 Lafayette av.
Gauss, Esther Mary	6110 Michigan av.
Gauss, Henry F.	6110 Michigan av.
Gilbert, Harry Robert	Portland, Mo.
Gilliam, Hoxsey	4257 Delmar av.
Glauber, Moses Montefiore	1527 E. Grand av.
Goldsmith, Clifford Sidney	3924 Botanical av.
Grace, Pierre Cleveland	4386 Lindell av.

NAMES.	RESIDENCE.
Grice, Frederick Wilson	Dallas, Texas.
Hall, Elinor Alice	531 N. Spring av.
Haydock, Charles Lacy	5975 Cote Brilliante av.
Haynes, Delos Garriott	East St. Louis, Ill.
Heck, Gertrude	California, Mo.
Heinzelman, Chester Arthur	Belleville, Ill.
Hickenlooper, George Loening	5154 McPherson av.
Hoffmann, George Edward	1924 Wright st.
Hospes, Richard, Jr.	3001 Lafayette av.
Hunt, Charles Leigh	4371 Laclede av.
Huse, Grace	4047 West Belle pl.
Johnson, Sidney	7025 Dale av.
Kratzer, Flora M.	3711 S. Broadway.
Krause, Kurt Alfred	5252 Vernon av.
Kupferle, Oliver Marcellus Edward	3931 West Belle pl.
Laichinger, Paul	3311 Lemp av.
Langenberg, George Omar	3879 Delmar av.
Ledbetter, Robert Anderson	Elizabethtown, Ill.
Logan, George Bryan	Cape Girardeau, Mo.
Mare, John Buckingham	3839 Cook av.
McFarland, Harry Fontaine, Jr.	3694 Laclede av.
McGoodwin, Robert Rodes	Bowling Green, Ky.
Meyer, Edward Gottlieb	2406 McNair av.
Miltenberger, Alexander Lassen	3758 West Pine boul.
Moreell, Samuel, Jr.	2614 Franklin av.
Morgan, Earl	3632 Blaine av.
Newcomb, Harold Barnes	5739 Clemens av.
O'Connor, Margaret	3529 Cozens av.
O'Neil, Laurence Winall	4244 West Pine boul.
Polster, John Philip	Warrenton, Mo.
Quesnel, Edgar Gayus	Shrewsbury, Mo.
Randall, Lillian Irene	2600A Marcus av.
Rosenheim, Milton Bala	3636 Shaw av.
Rudolph, Helen Baker	Clayton, Mo.
Schuck, Walter Philip	Belleville, Ill.
Schlueter, William Henry	4308 Gano av.
Schuricht, Alfons Gustave	1113 St. Ange av.
Siegfried, Isador	3019 Dixon st.
Sims, Irvin Augustus	2912 Washington av.
Sprague, Ethel Genevieve	Webster Groves, Mo.
Thomas, Spencer	Franklin, Tenn.
Title, Charles Earl	1304 Allen av.
Toeppen, Manfred Kurt W.	1813 Lami st.

NAMES.	RESIDENCE.
Trelease, Frank Johnson	Mo. Botanical Garden.
Trembath, James	Butte, Mont.
Tyler, Simeon Ray	5161 Washington boul.
Van Blarcom, Frederick	1 Westmoreland pl.
VanHorne, Columbus	Jerseyville, Ill.
Viley, Charles Morehead	Marshall, Mo.
Wahlert, Edna H.	3207 Eads av.
Walls, Robert Gould	2725 Taylor av.
Werthelmer, Alfred Jacob	3511 Washington av.
Wheeler, Clarence Chester	6907 Mitchell av.
White, Robert Rinier	Jennings, Mo.
Withrow, Edgar Partridge	3721 Westminster pl.
Witt, John William	2530 Warren st.
	Total, 93.

UNCLASSIFIED.

Barlow, Margaret Dickson	5240 Morgan st.
Higdon, Lena Biehl	2612 Russell av.
Isaacs, Gussie Agnes	5566 Cates av.
Reymershoffer, Hilda	4448 West Pine boul.
Roth, John Jacob	4529 Laclede av.
Schmale, John Edmund	Trenton, Ill.
Study, Herbert Guy	2336 Whittemore pl.
Yoffe, Leah Rachel	1015 N. 13th st.
	Total, 8.

SPECIAL STUDENTS IN ARCHITECTURE.

Bailey, Norman	4006 Page boul.
Beeson, Edward William	4241 Shenandoah av.
Burns, John Joseph	3664 Cook av.
Dillard, Frank Garrison	4027 Kossuth av.
Ewald, Raymond	946 Maryville av.
Friton, Ernest Theodore	1813 Geyer av.
Kolb, Fred John	2215 Sidney st.
Mullgardt, William Oscar	3822 Delmar boul.
Opperman, Clarence Braddock	Old Orchard, Mo.
Price, Chester Boyce	727 N. Spring av.
Saum, Frank John	1114 Rutger st.
Schaefer, Frank Robert	Ferguson, Mo.
	Total, 12.

SPECIAL STUDENTS.

NAMES.	RESIDENCE.
Allen, Terry West	5061 Lindell av.
Barbee, Harry	4128 Castleman av.
Becker, Anna Rebecca	1011 Dillon st.
Bixler, Florence	1392 Union boul.
Bulkeley, Rolla Copley	2920 N. 22nd st.
Burlingame, Katherine	4059 Delmar boul.
Campbell, Roy Alexander	3438 Lucas av.
Carleton, Murray, Jr.	Euclid & Park View avs.
Christopher, Edward Eugene	4358 Evans av.
Clute, Marion Morrill, A.B.,	4975 Reber pl.
Daudt, Herbert Wilkens	St. Charles, Mo.
Dorrance, Rose	5019 Shaw av.
Gardiner, William Robert	Grand Tower, Ill.
Gartside, Frances Decie	4024A Laclede av.
Glaser, Cora Kate	4643 Lindell boul.
Goodrich, Alice Eastman	5607 Bartmer av.
Hänssler, William	2207 College av.
Hilmer, Arthur Christian	2629 Allen av.
Hudson, Ione Harriet, A.B.,	4413A Page boul.
Johnson, Aaron Gabriel	Brookings, S. Dak.
Jonas, Rose Tuholske	2329 Locust st.
Kingsland, Lawrence Chappell	6034 W. Cabanne pl.
Kippenberg, Hanna	2931 Botanical av.
Kloss, Waldemar	1935 Cherokee st.
Krartsch, George Alexander	2914 Lucas av.
Kumashiro, Koh	Tokyo, Japan.
Langenberg, Ida	5244 Washington boul.
Lauenborg, Falm	Old Orchard, Mo.
Lautenbach, John Richard	2914 Lucas av.
Lawton, Rachel Remer	25 N. Spring av.
Mathey, Ilda	3444 Russell av.
McCaughan, Nellie	3126 Pine st.
McClure, George Edward	4241 Botanical av.
Randolph, George Arnold	Asheville, N. C.
Rosenberg, Adele	5021 McPherson av.
Shepardson, Elizabeth Daggett	Webster Groves, Mo.
Sprigg, Nora Lindley	Chester, Ill.
Steuever, Celia	Hotel Beers.
Takahashi, Kiyoshi	Tokyo, Japan.
Underwood, Ivy Mary	2913 Ellendale av.
Wasserman, Amelia	4537 Maryland av.
	Total, 41.

CANDIDATES FOR ADVANCED DEGREES.

FOR THE DEGREE OF MASTER OF ARTS.

NAMES.	SUBJECT.	RESIDENCE.
Allen, Frances, B.L., Smith College, 1904,	Pedagogy	St. Louis.
Battle, Anita Frances, A.B., Wash. Univ., 1902,	Latin	St. Louis.
Brown, Albert Marion, Ph.B., Ohio S. Univ., 1901; LL.B., Wash. Univ., 1903,	History	St. Louis.
Dennis, Arthur Edward, A.B., Wash. Univ., 1904,	English	St. Louis.
Eames, Laura Lucile, A.B., Univ. of Mich., 1902,	Botany	Old Orchard, Mo.
Horwitz, Alexander Earle, A.B., Wash. Univ., 1900,	History	St. Louis.
Lewis, John James, A.B., Wash. Univ., 1900,	History	Webster Groves, Mo.
Robinson, Edwin Loomis, A.B., Yale, 1896,	{ Greek { Latin	St. Louis.
Rose, Dean Humboldt, A.B., Univ. of Kans., 1904,	Botany	St. Louis.
Shahan, William Ewing, A.B., Wash. Univ., 1901,	Physics	St. Louis.
Vickroy, Wilhelm Rees, Ph.B., Wash. Univ., 1883,	English	St. Louis.
Watson, Sallie, A.B., Mo. S. Univ., 1902,	Botany	St. Louis.

FOR THE DEGREE OF MASTER OF SCIENCE.

NAMES.	SUBJECT.	RESIDENCE.
Ashby, Winifred B. S., Chicago Univ., 1903,	Botany	St. Louis.
Schantl, Hans, B.S., Wash. Univ., 1903,	Science	St. Louis.

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

Hedcock, George Grant, B.S., Univ. of Neb., 1899; A.M., Univ. of Neb., 1901,	Botany	St. Louis.
Rumbold, Caroline Thomas, B.L., Smith College, 1901, A.M., Wash. Univ., 1903,	Botany	St. Louis.
		Total, 16.

SUMMARY.

Seniors	33
Juniors	35
Sophomores	43
Freshmen	93
Candidates for Degrees not classified.....	8
Candidates for Advanced Degrees.....	16
Total number of candidates for degrees.....	228
Special Students in Architecture.....	12
Other Special Students.....	41
Total.....	281

COURSES OF INSTRUCTION PROVIDED IN THE UNDERGRADUATE DEPARTMENT.

GREEK.

Professor Hall and Dr. Van Hook. Three times a week.

Credit for all courses, 3 units, unless otherwise stated.

ELEMENTARY GREEK.

A course designed for students who wish to begin the study of Greek.

The class recites five times a week and completes, during the year, the Greek ordinarily required for admission to college.

Students who successfully complete this course will be given a credit of *ten units* towards the A. B. degree.

Dr. Van Hook.

1. a. Homer: Iliad, Books III-VI; Odyssey, "The Phæacian Episode." First term, 1905-6. *Professor Hall.*

1. b. Homer: Odyssey, Books I-IV. Omitted, 1905-6.

2. Lysias: Selected Orations. Greek prose composition. Second term, 1905-6. *Professor Hall.*

The work of the Freshman Year is designed to strengthen and broaden the work already done in the Preparatory School; to train the student in the structure of a logical and delicate language.

In Homer, Epic forms are constantly compared with corresponding Attic forms. Some attention is given to the characteristics of Homeric times—the forms of government, religion, marriage, views of life.

In Lysias a study is made of the Moods and Tenses of Greek. The historical setting of the orations is considered.

Prose composition is more to fix in the mind the forms and principles of syntax than to acquire a readiness in simply writing Greek.

3. Plato's Apology and Crito. First term, 1905-6.

Professor Hall.

The work upon the text is supplemented with lectures upon the schools of Greek philosophy. A careful analysis of the Apology is required of students taking this course.

4. Aeschylus' Prometheus Bound and Euripides' Iphigenia among the Taurians. Second term, 1905-6.

Professor Hall.

Collateral reading: Prometheus Unbound by Shelley; Mrs. Browning's Prometheus; Milton's Samson Agonistes.

In connection with this course lectures are given concerning the Greek theater, particularly upon buildings, scenery, actors, chorus, costumes, etc.

Emphasis is laid upon the plays as works of literary art.

In the Sophomore Year the subject-matter is given more attention than the structure of the language.

5. Demosthenes' De Corona. First term, 1905-6.

Professor Hall.

The arguments presented by Demosthenes are compared with those used by Aeschines in his oration against Ctesiphon.

Collateral reading: Burke's speech on the Nabob of Arcot's Debts and Webster's Reply to Hayne.

The conditions which develop oratory are discussed and considerable attention is given to the conflict between Athens and Philip.

6. Aeschylus' Agamemnon. Second term, 1905-6.

Professor Hall.

In this course a somewhat critical study is made of the text—various German and English editions being compared with text-book used by the class.

Collateral reading: Shakspeare's Macbeth and Hamlet.

7. The Electras of Sophocles and Euripides. First term, 1905-6.

Professor Hall.

In connection with this course the Chæphori of Aeschylus is interpreted by the instructor.

The theme being the same for the three poets, an excellent opportunity is afforded for comparing and contrasting their methods of treatment.

8. Euripides' Medea and Aristophanes' Clouds. Omitted, 1905-6.

9. Homer: "The Story of Achilles." Iliad, Books I, IX, XI, XVI-XXIV. Omitted, 1905-6.

10. Sophocles, the seven extant plays. Omitted, 1905-6.

11. Homer: Odyssey, Books I-XXIV. Omitted, 1905-6.

12. Advanced Greek Prose Composition. Open to students who have had courses 1. a. or 1. b. and 2. Omitted, 1905-6.

This course supplements the elementary prose composition work of course 2. A study of the prose styles of the best authors with exercises, involving paragraph writing, based upon these models. Primarily for students who intend to teach Greek or Latin.

13. Greek Literature, particular attention being given to the Athenian Drama. Omitted, 1905-6.

Lectures on the Dramatic Art and Literature of the Greeks, with reading and study of the extant plays of the Greek dramatists. The stereopticon is used in illustrating orchestra, thrones, tiers of seats, etc.

14. Private life among the Greeks. Second term, 1905-6.

Professor Hall.

Two hours a week. Credit of two units.

Lectures, required reading; one or more short theses.
 In 1905-6 open to all students beyond Freshmen Year.
 Freshmen desirous of taking the course must get
 instructor's permission. Knowledge of Greek not
 necessary.

15. Introduction to the study of Comparative Philology of
 Greek and Latin. *Professor Shipley.*

This course is offered with special reference to those who
 intend to teach Greek or Latin.

For details, see page 103.

16. Plato's *Phædo*, *Gorgias* and *Protagoras*. Omitted, 1905-6.

17. Greek Tragedy. Aeschylus' *Prometheus Bound*, Sopho-
 cles' *Oedipus Tyrannus*, Euripides' *Hippolytus*.
 Omitted, 1905-6.

18. New Testament Greek. First term, 1905-6.

Dr. Van Hook.

19. The Greek Lyric Poets and Theocritus. Second term,
 1905-6. *Dr. Van Hook.*

A study of selections from elegias, iambic and lyric poetry
 and the idyls of Theocritus.

In 1905-6 this course will be open to students who have
 had 1. *a.* or 1. *b.* and 2.

20. Demosthenes' *Opposition to Philip*.

The orations of Demosthenes against Philip from 351
 B. C. to 341 B. C. Omitted, 1905-6.

Several of the courses from 8 to 20 are given on alternate
 years, hence each year some are marked "omitted."

Courses 1, 2 and 3 are prerequisites for all further courses
 in Greek except those mentioned below.

Courses 13 and 14 are open to *all students*, and for these
 courses a *knowledge of Greek is not necessary*.

Students who are preparing to teach Greek are urged to
 take as many courses in Latin as practicable.

LATIN.

Professor Shipley and Dr. Van Hook.

Credit, 3 units, unless otherwise stated.

1. Cicero, de Senectute. Selections from Catullus, Tibullus, Propertius, and Ovid. The writing of Latin and sight reading. First term, 1905-6. *Dr. Van Hook.*
2. Livy, selections from Books II-V. While the chief aim of this course is to develop the faculty of rapid reading, the passages selected deal with the more stirring episodes of the first century of the Republic, and the history of Rome from the Fall of the Kings to the Capture of the City by the Gauls will be studied in some detail. Second term, 1905-6. *Professor Shipley.*
3. Horace, the Odes and Epodes. The literary study of the material will be emphasized. In connection with this course will be studied the history of Augustan literature. First term, 1905-6. *Professor Shipley.*
4. Cicero, Selected Letters. A study of the political history and the daily life of the Romans in the last days of the Republic. Second term, 1905-6. *Dr. Van Hook.*
5. Pliny, Selected Letters. Martial, Selected Epigrams. The Private Life of the Romans. It is the aim of this course to give, by means of lectures and the reading of selections from the two authors, a general picture of Roman life in the first century of the Empire. Wherever possible, the work of the course will be illustrated by stereopticon views. Papers on special topics will be prepared by the members of the class. Second term, 1905-6. *Professor Shipley.*
6. Plautus: Rudens, Pseudolus, Captivi, and Trinummus. Terence: Adelphi, Heauton Timoroumenos. These plays will be made the basis of a study of the Roman Comedy, and, on the linguistic side, of a study of the forms and construction of early Latin. First term, 1905-6. *Professor Shipley.*

7. Catullus. Horace, Epistles, Book I. Attention will be given in the study of Catullus to comparisons between his lyric ideals and those of Horace, and to his treatment of the various metres. The Epistles of Horace will be studied with special reference to his philosophy of life. 1906-7. *Professor Shipley.*

8. Tacitus: Annals. The text of Tacitus will be made the basis for a study of the history of the first half century of the Empire. Omitted, 1905-6.

Professor Shipley.

8a. Tacitus: Germania, Agricola. Selections from the Annals and Histories. Cæsar: Selections from the Bellum Gallicum. Suetonius: Selections from the Lives.

These works will form the basis for a study—

- 1) Of the early institutions of the Teutonic peoples;
- 2) Of the history of the Roman occupation of Gaul, Germany and Britain to the end of the first century A. D.

First term, 1905-6.

Professor Shipley.

9. Roman Satire. The reading of the Satires of Horace, Persius, and Juvenal will form the basis of a study of the development of Roman Satire. Omitted, 1905-6.

Professor Shipley.

10. Cicero: Tusculan Disputations and De Finibus. First term, 1905-6.

Dr. Van Hook.

11. The Roman Elegists: Selections from Tibullus, Propertius, and Ovid. Second term, 1905-6.

Dr. Van Hook.

12. Quintilian, Book X. Horace, Epistles, Book II. A study of literary education and literary criticism at Rome. Second term, 1906-7. (*Two hours a week.*) 2 units.

Professor Shipley.

13. Advanced Course in Latin Composition. A study of the prose styles of the best authors, with exercises based upon these models. The principles of Latin syntax will also be reviewed. (Primarily for students who intend to teach Latin.) First term, 1905-6.

Professor Shipley.

14. Outline Course in the History of the Latin Literature of the Republic. (*One hour a week.*) 1 unit. Second term, 1906-7. *Professor Shipley.*
- 14a. Outline Course in the History of the Latin Literature of the Empire. (*One hour a week.*) 1 unit. Second term, 1905-6. *Professor Shipley.*
15. Introduction to the study of Comparative Philology of Greek and Latin. 1906-7. *Professor Shipley.*
16. Selections from the Poets of the Empire. It is the aim of this course to deal with the more salient features of the poets of the Empire, whose works are not covered in detail in the other courses in this department. The text-book will be Gudeman's Latin Literature of the Empire, Vol. II. (*Two hours a week.*) 2 units. Students wishing to secure the full three units may take in conjunction Latin 14a. Second term, 1905-6. *Professor Shipley.*
17. Lucretius. In connection with the *de Rerum Natura* will be studied in outline the history of Materialism, ancient and modern. Course 4 in the department of Philosophy is a desirable preliminary. First term, 1906-7. *Professor Shipley.*
18. Introduction to the study of Latin Epigraphy. This course will consist in (1) a general outline; (2) in a more detailed study of those inscriptions which bear upon Roman political institutions, Roman life, and the development of the language. Omitted in 1905-6. *Professor Shipley.*
19. Introduction to Latin Palæography. The course will consist in lectures by the instructor, practical work by members of the class upon facsimiles of manuscripts, and a discussion of the general principles of textual emendation upon its palæographical side. Omitted, 1905-6. *Professor Shipley.*
20. Research course in the history of the first century of the Republic. Livy, Books II-V, will be made the basis of a study of the sources for this period and of the general question of the credibility of early Roman history. For advanced students. Omitted, 1905-6. *Professor Shipley.*

Courses 1, 2 and 3 are prerequisite to further work in Latin.

Students who intend to specialize in Latin are also urged to take courses in Greek.

Students who expect to teach Latin in secondary schools are referred to the list of studies under "Arrangements of Studies in the College" of this catalogue.

ENGLISH.

Professor Penn and Mr. Starbird.

Credit, 3 units for each course.

I. COMPOSITION AND RHETORIC.

1. English Composition and Rhetoric. Text-book; lectures; the writing of themes at stated intervals (ordinarily once a week), and also extemporaneously in the class-room; and individual conferences of student with instructor. Students are required in addition to read a few masterpieces of English Literature, and to make this reading the subject of certain of the regular themes.

Required of all Freshmen in both the College and the School of Engineering. First term, Mr. Starbird. Second term, Professor Penn.

2. Continuation of Course 1. Study of the forms of discourse; the writing of long bi-weekly themes; individual conferences with the instructor; and the reading of certain pieces of literature. A considerable amount of time will be given to the reading and the discussion of the bi-weekly themes. Offered only in the second term.

Required of all Freshmen in both the College and the School of Engineering. Mr. Starbird.

3. Argumentation and Debate. The study of the logical and the rhetorical principles of argumentation; written exercises in the analysis of arguments and in the preparation of briefs; lectures on the collection of material and on the use of authorities; frequent oral debates. Baker's "Principles of Argumentation." As the questions for debate will lie chiefly in the fields of economics and history, members of the class should have taken or be taking work in those subjects; the Department of Economics especially will render assistance in the collection of materials. First term. *Professor Penn.*

Students should consult with the instructor before entering the course.

4. Narration and Description. Writing of daily themes; writing of four themes of from fifteen hundred to two thousand words; writing of a short story of about seven thousand words. Study of narration, description, characterization, background, and plot in the works of modern writers. Second term. *Mr. Starbird.*

Open to those students who satisfy the instructor of their ability to do the work.

II. LINGUISTICS.

11. Old English (beginning course). Bright's "Anglo-Saxon Reader" (Holt). First term. *Professor Penn.*
12. Beowulf; Old English Phonology. Wyatt's "Beowulf" (Macmillan); Cook's Sievers' "Grammar of Old English" (Ginn). Second term. *Professor Penn.*

Students in this and other advanced courses in English Philology should take also German 15, History of the German Language.

14. Middle English, based on Chaucer. Liddell's "Chaucer's Prologue," etc. (Macmillan); The Globe Chaucer (Macmillan). Ten Brink's "Chaucer's Sprache und Verskunst," for reference. Second term. *Professor Penn.*

Courses 12 and 14 are offered in alternate years, each being a continuation of Course 11.

III. LITERATURE.

- 21, 22. General Introduction to English Literature. Historical and appreciative study of the literature from the beginning to the present time. First term, Chaucer to

Milton; second term, Dryden to the present time. Lectures; text-book; assigned reading, on which students make written reports. Emphasis is laid on the connection between literature and national life and history. Moody and Lovett's "History of English Literature" (Scribner); Pancoast's "Standard English Poems" (Holt). Both terms. *Professor Penn.*

Students should have a good history of England for reference; Cheyney (Ginn), Green (Harper), and Gardiner (Longman), are recommended.

Required of Sophomores in the College.

23. Nineteenth Century Prose (exclusive of the novel). Devoted chiefly to 19th Century essayists from Francis Jeffrey to Matthew Arnold. The course serves as, in part, an introduction to the romantic product of the first part of the century, and is in that way preparatory for Course 24. First term. *Professor Penn.*
24. Poetry of the Romantic Revival (1780-1830). Lectures; classroom study of the texts; assigned readings; frequent written discussions or reports. Special attention will be given to consideration of Wordsworth's definition and theory of poetry, and to the nature of poetry in general. Second term. *Professor Penn.*
25. The Novel in England. Study of the history of the novel in England, based upon the reading of a large amount of prose fiction. Weekly papers on topics suggested by the reading. Term papers. First term. *Mr. Starbird.*
27. Shakspeare. Four plays for classroom study, and four or five parallel. Occasional papers. Students should buy Sidney Lee's "Shakespeare's Life and Work" (Macmillan). For 1905-6, Macbeth, King John, Twelfth Night, and Cymbeline, are chosen for study. First term. *Professor Penn.*
30. American Literature. A study of American Literature from its beginnings. The discussion in the classroom will be based upon a considerable amount of assigned reading, and will be two-fold in purpose; first, to ascertain the intrinsic literary merit of each writer; second, to determine his place in the development of national

or sectional thought. Weekly essays on topics suggested by the reading. Term papers. Second term.

Mr. Starbird.

28. English Literature from Spencer to Milton. Second term. (Not to be given in 1905-6.)

32. English Literature of the Eighteenth Century (Dryden to Johnson). Second term. *Professor Penn.*

33, 34. Victorian Poetry. First term, chiefly Tennyson; second term, chiefly Browning. (Not to be given in 1905-6.)

Courses 3 and 4 are open to any students prepared for the work. Courses 23, 24 and 25 are primarily for Juniors; other elective courses, for Seniors and Juniors. Unclassified students, and in special cases regular students below the Junior Year, may be admitted to any elective work for which they show themselves prepared.

GERMAN.

Professor Heller and Dr. Reiff. Three times a week.

Credit, 3 units, unless otherwise stated.

The aim of the elementary classes in this department is to give the student a thorough knowledge of German grammar and to enable him to acquire facility in reading German. The higher classes take up the study of the New-High-German classics and the writers of the nineteenth century. The department also offers opportunities to teachers of German and to other advanced students for special work in the field of German literature and German philology.

1-2. Elementary Grammar (Accidence). Translation. Some practice in speaking German. Reading: 1904-5: *Wiedemann, Biblische Geschichten; Heller, Erste Stufe; Moser, der Bibliothekar.**

Professor Heller and Dr. Reiff.

*Other texts of an equal degree of difficulty may be substituted for those named above.

- 1a-2a. (The equivalent of 1, 2, 3 and 4.) Elementary German, including syntax and rapid reading. Intended for students entering without any previous preparation in German who desire to take advanced German in the second (instead of the third) year of their residence. Open to all undergraduates. *Five times a week; both terms, five units each term.* Given in 1905-6. *Professor Heller.*
- 3-4. Grammar (Syntax). Elements of Prose Composition. German conversation, based upon the texts read. Reading: 1905-6: *Meyer*, Gustav Adolfs Page; *Schücking*, Die drei Freier; *Schiller*, Ballads; Lied von der Glocke; Wilhelm Tell. *Dr. Reiff.*
- 3a. Scientific Reading. For students desiring to acquire facility in the reading of scientific literature. For students in the School of Engineering and College students taking at least one course in natural science. Prerequisite, the College entrance requirements in German. *Once a week; one unit.* Given in 1905-6, second term. *Dr. Reiff.*
- 5-6. History of German Literature in the Eighteenth Century. At least two of the works read in this course are critically analyzed. Reading: *Lessing*, Minna von Barnhelm; Nathan der Weise (privately); *Goethe*, Hermann und Dorothea; Iphigenie auf Tauris (privately); *Schiller*, Wallenstein. Given in 1905-6. *Professor Heller.*
7. German Syntax and Prose Composition. *v. Jagemann*, German Syntax; *Poll*, German Prose Composition. *Twice a week, first term.* Given in 1905-6. 2 units. *Professor Heller or Dr. Reiff.*
- †7a (and 8a). German Themes. Selections from modern authors are read to the students and reproduced by them from memory. The grammar is incidentally reviewed and linguistic difficulties are treated specifically. Given in 1905-6. *Once a week, first term.* 1 unit. *Professor Heller or Dr. Reiff.*

†7a may be taken in conjunction with 7, in which case the two are counted as a normal course of three units.

- *8. German Daily Life. A course in German conversation.
Kron, German Daily Life. Twice a week, second term. 2 units. Given in 1905-6. Dr. Reiff.
- 8a. German Themes. Continuation of 7a (see above).
Once a week, second term. 1 unit. Given in 1904-5. Professor Heller.
9. Outlines of the History of German Literature. Lectures, topical reports, and illustrative readings.
Professor Heller.
10. Goethe's Faust. A study of the legend and its sources. Interpretation of Goethe's poem and discussion of its philosophical and ethical ideas. *Professor Heller.*

For the following *literar-historic* courses the ability to speak German is requisite:—

19. German Romanticism. *Dr. Reiff.*
11. Development of German Lyric Poetry in the Eighteenth and Nineteenth Century. *Professor Heller.*
12. Development of the German Novel in the Nineteenth Century. *Professor Heller.*
13. Development of the German Drama in the Nineteenth Century. *Professor Heller.*
14. German Seminar. The methodology of literary research, applied to practical work. *Once a week. Two hours. Three units. Professor Heller.*

The following *philological* courses will be organized if elected by four students of advanced standing; the four cover a period of two years, following each other in the order named. 15 ought to be elected by all those who contemplate teaching German.

15. History of the German Language; an introduction to the study of Germanic Philology. *Behaghel, die deutsche Sprache. Together with Gothic Phonology and Morphology. Braune, Gotische Grammatik. Reading of Wulfila's Bible.*

*Courses 8 and 8a may be taken together as a normal course of three units.

16. Old-High-German Language and Literature. *Braune*, Althochdeutsche Grammatik; *Braune*, Althochdeutsches Lesebuch.
17. Middle-High-German Grammar. *Paul*, Mittelhochdeutsche Grammatik. Textual interpretation of Meier Helmbrecht.
18. Middle-High-German Literature. Reading of lyric and epic poetry; selections from Walther von der Vogelweide and other Minnesingers, and portions of the great folk and court epics.

The Department of German is equipped with a working-library containing most of the books and periodicals necessary for the above courses.

FRENCH.

Professor Douay and Mr. Ewington. Three times a week.

Credit, 3 units, unless otherwise stated.

- 1-2. Elementary Courses: Pronunciation, elementary grammar, reading and translation of easy French.
- 3-4. Reading Courses in Modern French: Novels, selections from historians, plays and poems.

Courses 3-4 are primarily intended for students who do not want to take any higher course, and only desire to acquire a fair reading knowledge of French.

- 5-6. Syntax and Composition: Readings in the classroom and outside.
- 7-8. Composition and Conversation: Readings in the classroom and outside. The work is almost entirely oral and covers a large ground.

Courses 5-6 and 7-8 are parallel. They are open to students who have had French 1 and 2, or who have presented French for entrance. Courses 7-8 are intended for students who have shown unusual ability in their previous work, and who desire to specialize in French.

- 9-10. General introduction to the study of French literature: A survey of its different periods, particularly from the Seventeenth Century to the present time. Illustrated by readings of characteristic works.
11. The French Drama in the Seventeenth Century. First term omitted, 1905-6.
12. Critics, moralists and orators in the Seventeenth Century. Second term omitted, 1905-6.
13. The Romantic Movement in France. First term.
14. The Literary Movement in France in the latter part of the Nineteenth Century. Second term.

Courses 9 to 14 are, as far as possible, conducted in French (lectures, reading and explanation of texts).

The Department Library contains the books most essential for the courses mentioned above.

PHILOSOPHY.

Professor Lovejoy. Three times a week.

Credit, 3 units.

1. Deductive Logic: Elementary study of the conditions of formal consistency in reasoning. Text-book, lectures and practical exercises in the analysis of arguments. *First term.*
2. Logic of the Sciences: The canons of induction, and the general methodology of scientific hypothesis and verification. Text-book, lectures and recitations. *Second term.*
3. Introduction to Philosophy: A preliminary survey of the problems and methods of philosophical inquiry. Lectures, required reading and recitations.
4. History of Ancient Philosophy from the Ionian Schools to the Neo-Platonists. Text-book, lectures and supplementary reading. *First term.*

5. History of Modern Philosophy, from the beginning of the Renaissance to Kant. Text-book, lectures and supplementary reading. *Second term.*
6. Philosophy of Kant: Critical reading of the *Prolegomena* with collateral reading in the *Kritik der reinen Vernunft*; lectures on Kant's relations to his predecessors, and on the significance of his doctrine. Students are required to write an outline of the argument of the whole of the *Prolegomena*.
7. Ethics: Analysis and criticism of the chief modern types of ethical theory, with an attempt at reconstruction. The greater part of the course deals with the successive phases of English Utilitarianism from Bentham to Sidgwick, and with Green and his school; these historical preliminaries lead up to an attempt at a more complete and accurate account of the psychology of volition, of the effect of the fact of self-consciousness upon the mode of man's volition, and of the relation of these psychological facts to the problems of ethical theory. Lectures, required reading, theses and classroom discussions. *First term.*
8. Contemporary Problems in Ethics: An examination of several controverted questions in the application of ethical theory to the practical problems of modern life. The questions dealt with are: The limits of compromise in morals; the antithesis of self-development and social conformity; the conception of natural rights; the ethical bases of civil government; the ethics of the distribution of wealth; the ethics of international relations; the import of biological theories of evolution for practical ethics. *Second term.*

Open to those who have taken 7 or 3, or 4 and 5, together with Economics 1 and 2. The work will consist of lectures, assigned reading, class discussions, and fortnightly themes, with a theme of some length on some selected topic at the end of the course.

9. Theory of Knowledge: An examination of the limits and degrees of knowledge, with special applications to the principal varieties of real or supposed knowl-

edge; the psychology of judgment and assent; the ethics of belief. Based upon a historical study of the most important theories concerning these problems since Locke.

10. Philosophy of the Eighteenth Century: A study of the characteristic conceptions and tendencies of English, French and German thought from 1689 to the time of the French Revolution, with especial reference to the relation of the philosophical doctrines of the period to general literature and to religious, political and social movements. Lectures, required reading and theses. *Two hours, both terms.*

Courses 1, 4, 5, 7 and 8 will be offered for 1905-6.

ECONOMICS.

Assistant Professor Winston. Three times a week.

Credit, 3 units.

1. Principles of Economics: An introduction to economic theory, with reference chiefly to value, wages, interest, profit, rent.
2. A continuation of 1, considering briefly the subjects of money, banking, foreign exchange and international trade, labor organizations, monopolies, taxation.
3. Principles of Sociology.
- 4-5. Questions of the Day. The choice of topics will vary somewhat from year to year. In 1905-6 the subjects dealt with will be Trusts, Railways, Municipal Lighting, and Street Railways, Socialism and other projects for social reform. These subjects are so considered as to make the courses in their entirety a study of the State in its relation to industry.
6. Money and Banking.
7. Public Finance (chiefly a study of Taxation, with a rapid consideration of other public revenue, public debts and expenditure).

8. **Economic History:** A brief survey of ancient and medieval industry, with a more detailed study of modern economic life, its history and present organization.
9. For students in the School of Engineering and Architecture: (a.) The Elements of Economics—value, wages, rent, interest, profits; (b.) selected questions relating to labor—factory legislation, the eight-hour day, labor organizations.
10. A continuation of 9: (a.) trusts and corporations; (b.) transportation—chiefly dealing with railways.
11. Labor (The theory of Wages, the condition of wage-earners in Europe and America, labor legislation, labor organizations and other plans for the benefit of wage-earners).

Debates in Economics. English 3 (argumentation and debates) will consist in large part of debates on economic questions, and the Department of Economics will assist in the work of that course.

The work in all courses includes lectures and assigned readings. Text-books are used also in 1, 2 and 9. Courses 1 and 2 are continuous, and neither should be taken without the other. They are required as preliminary to all courses but 8, 9 and 10, and are offered each year. Freshmen will be admitted to 1 and 2 only by special permission. Course 8 may be taken by students in any class; it may profitably precede 1 and 2, but should not be chosen instead of 1 and 2.

In the first term of 1905-6, Courses 1, 4, 6 and 9 will be given; in the second term, 2, 5, 7 and 10.

HISTORY.

Professor Snow and Mr. Walter R. Smith.

Three times a week.

Credit, 3 units.

1. Greece: To the overthrow of the Empire of Alexander.
First term.

Professor Snow.

2. Rome: To the beginnings of the Empire. First term.
Omitted, 1905-6. *Professor Snow.*
3. England: To the Tudor Period. First term. Omitted,
1905-6. *Mr. Smith.*
- 3a. England: Tudors and the Stuarts from Henry VII. to
William III. First term. *Mr. Smith.*
4. England: Modern period since the Revolution of 1689.
Second term. *Mr. Smith.*
5. France: From Hugh Capet to Henry IV. First term.
Professor Snow.
- 5a. France: From Henry IV. to the Revolution of 1789.
Second term. *Professor Snow.*
6. France: The Revolution and the Empire. Second term.
Omitted, 1905-6. *Professor Snow.*
7. Germany: The Holy Roman Empire to the Peace of
Westphalia. First term. *Professor Snow.*
8. Eastern Europe since the Fall of the Western Empire;
Russia; Poland; Turkey. Second term.
Professor Snow.
9. The Elements of International Law, special attention
being paid to important treaties illustrating the
growth and force of International Law. Second term.
Professor Snow.
10. American History: Colonial History of the United
States to the Revolution. *Mr. Smith.*
11. American History: The United States from the Revolu-
tion to 1840. *Mr. Smith.*
12. American History: The United States since 1840.
Omitted, 1905-6. *Mr. Smith.*
13. The Government of the United States. First term.
Mr. Smith.
14. Comparative view of the governments of the United
States and European countries. Second term.
Mr. Smith.

Courses 3 and 4 are primarily for Freshmen and are required for admission to Courses 5, 5a and 6, and 10, 11 and 12, which are primarily for Sophomores.

Courses 7 and 8 are primarily for Juniors, and Courses 9, 13 and 14 for Juniors and Seniors.

Courses 1 and 2 may be taken by members of any class except the Freshman class, as also may Courses 10, 11 and 12.

Class-work is carried on with both recitations and lectures, with much written work and frequent written examinations. Atlases, maps, reference books, and lantern slides are provided and made much use of. Every effort is made to awaken and hold the interest of the students in the history of the past as a reality; to show the connection in historic events of cause and effect; to teach the growth of the life of the people and of their institutions as well as the development of the monarchical and military systems of Europe.

Students are taught what to read as collateral reading, and how to use such material, and as far as is possible or desirable to know something of the sources from which the historian gets his narrative.

HISTORY OF ART.

Assistant Professor Holmes Smith.

1. Greek Art. With special attention to Greek Sculpture. *Three times a week. Credit, 3 units.*
2. Mediæval Art. With special attention to the great cathedrals. *Three times a week. Credit, 3 units.*
3. Renaissance Art. With special attention to the great Schools of Painting. *Twice a week. Credit, 2 units.*
4. Modern Art. From the beginning of the Nineteenth Century down to recent times. *Once a week. Credit, 1 unit.*
5. History of Painting. *Once a week. Credit, 1 unit.*
6. History of Sculpture. *Twice a week. Credit, 2 units.*

Courses in History of Art are not open to Freshmen. Courses 5 and 6 are intended primarily for students in Architecture, but other students may be admitted whose previous training is such as to enable them to profit by the course.

PEDAGOGY.

Professor Swift. Three times a week.

Credit, 3 units. c

1. History of Education from the Renaissance to the Eighteenth Century: Education is the outgrowth of the philosophy and life of a people, and the object of this course is to study the evolution of the educational ideal in connection with the conditions in which it had its origin and amid which it developed. Physical environment, social, industrial and political conditions, traditions, customs and religion have each had their influence in determining racial development, one phase of which has found its expression, during the different periods, in the educational systems of the several nations. The work thus becomes a study of the origin and growth of the educational ideal and an investigation of the causes leading to it. Text-book, lectures, selected reading and class-room discussions. *First term.*
2. History of Education from the Eighteenth Century to the present time. Text-book, lectures, selected reading and class-room discussions. Open to those who have taken course 1. *Second term.*
3. Mental and Physical Development of Children: The process of development during childhood and adolescence will be studied as a basis for determining the conditions that make for mental activity and economy. Lectures, child-study literature, and class-room discussions. *First term.*
4. Contemporary Educational Problems: Questions of the curriculum, method of the recitation, school organization and government will be discussed in the light of recent investigations and experiments. Lectures, selected reading, and class-room discussions. Open to those who have taken course 1. *Second term.*

6. Introduction to the Philosophy of Education: The results of investigations in psychology, biology, neurology, anthropology, ethnology and sociology will be interpreted in their relation to education. Lectures and class-room discussions. Open to those who have taken courses 1 and 2. *Second term.* Omitted, 1905-6.

PSYCHOLOGY.

Professor Swift. Three times a week.

Credit, 3 units.

1. Introduction to Psychology: Analysis of the simpler phenomena of consciousness. Text-book, lectures, selected reading and class-room discussions. *First term.*
2. Principles of Psychology and Psychological Method: Selected topics; introduction to the method of psychological research; lectures, selected reading, class-room discussions and laboratory work. Open to those who have taken course 1. *Second term.*
3. Comparative Psychology: An introduction to the mental life of animals. Their instincts and habits will be observed and interpreted in their relation to the development of intelligence. Investigations and experiments in the educability of animals. Lectures, selected reading, class-room discussions and laboratory work. Open to those who have taken courses 1 and 2. *First term.* Omitted, 1905-6.

MATHEMATICS.

Professor Woodward, Professor Chessin and Dr. James.

Credit, 3 units, unless otherwise stated.

1. Higher Algebra. *Professor Chessin and Dr. James.*
Three times a week.
- *2a. Plane Trigonometry. *Dr. James.*
Twice a week. 2 units.

*Spherical Trigonometry is carried on in connection with Astronomy 2.

- 2b. Higher Algebra *continued.* *Dr. James.*
Once a week. 1 unit.
3. Analytic Geometry. *Professor Chessin and Dr. James.*
Three times a week.
4. Differential Calculus. *Professor Chessin.*
Three times a week.
5. Integral Calculus. *Professor Woodward.*
Three times a week.
6. Differential Equations. *Professor Woodward.*
Twice a week. 2 units.
- 7-8. Descriptive Geometry. *Professor Chessin.*
Two lectures a week. Drawing three hours a week.

ASTRONOMY.

Dr. James.

Credit, 3 units.

1. Descriptive Astronomy. Lectures and recitations, with occasional work at the observatory. *Three times a week.*
2. Practical Astronomy. Applications of Astronomy in determination of time, Latitude, Longitude and Azimuth. *Three times a week.*
Spherical Trigonometry is carried on in connection with course 2.

APPLIED MECHANICS.

Professor Woodward. Three times a week.

Credit, 3 units.

1. Graphical Statics, Stress Diagrams for Frames, Trusses and Bridges, analyzed and drawn to scale.
2. General Principles of Statics with illustrative examples. Moments of Inertia, Kinematics and Kinetics.

3. Strength and Stiffness of Girders and Shafts. Dynamics. Action of Unbalanced forces.
4. Deflection of Beams and Girders and tests in Torsion.
5. Mechanism, including the general theory of transmission of energy by Gearing, Liquids, Belts, etc., with and without friction.

PHYSICS.

Professor Nipher and Mr. Pyle.

Credit, 3 units.

1. Elementary Mechanics, including the Mechanics of Fluids. *Two lectures or recitations and two hours of laboratory work a week.*
2. Heat. *Two lectures or recitations and three hours of laboratory work a week.*
Optics. Two lectures or recitations and three hours of laboratory work a week.
3. Electricity and Magnetism. *Three lectures or recitations and three hours of laboratory work a week.*
- 4-5. Laboratory instruction in Electrical Measurements, including measurement of resistances, E. M. F. of batteries, the calibration of amperemeters and voltmeters, electrolytic measurements, magnetic determinations, heating effect of currents, electrical determinations of Joule's equivalent. *Six hours a week.*
6. Introduction to the mathematical theory of Electricity and Magnetism, including the theory of Potential; capacity of bodies; energy of electrical systems; electrometers and electrostatic voltmeters, theory of magnetic measurements, magnetic fields due to electric currents, electrical induction, theory of dynamos and electric motors, alternating currents, tri-phased systems. *Three hours a week.*
7. College Physics, including mechanics, heat and sound. *Two lectures or recitations and two hours of laboratory work a week.*
Open to all who have had Freshmen Mathematics.

8. College Physics; optics, electricity and magnetism.
Two lectures or recitations and two hours of laboratory work a week.

Open to all who have had Freshmen Mathematics.

CHEMISTRY.

Professor Keiser, Mr. Leavitt and Mr. Steidemann.

Credit, 3 units, unless otherwise stated.

- 1-2. General Descriptive Chemistry. Lectures and laboratory work upon the preparation and properties of the more important elements and compounds. General laws and principles of chemistry. *Two lectures and two hours of laboratory work a week.*
3. Qualitative Analysis. Systematic methods of separating and detecting the bases and acids. Laboratory work. *Six hours a week.*
4. Quantitative Analysis. Methods of gravimetric and volumetric analysis. Laboratory work. *Six hours a week.*
- 5-6. Organic Chemistry. Lectures upon the chemistry of the carbon compounds. Preparation, properties and transformations of typical compounds. Methods of determining chemical constitution; relationships between classes of compounds. General laws and theories. *Three hours a week.*
- 7-8. Laboratory Work in Organic Chemistry. Preparation and study of the transformations of typical compounds. *Six or twelve hours a week.*
- 9-10. Advanced Quantitative Analysis. Laboratory work. Analysis of commercial and industrial materials and products. Assaying. Sanitary examinations of foods, water, etc. Gas analysis. *Six or twelve hours a week.*
11. Laboratory work in Physical Methods. Determination of molecular weights by the freezing point and boiling point methods. *One hour a week. Credit, 1 unit.*

12. Chemical Seminary. Advanced workers and instructors meet to report upon and discuss articles in current chemical journals. *One hour a week. Credit, 1 unit.*
13. Mineralogy. Crystallography and the determination of minerals by means of the blowpipe. *Three hours a week.*
14. Descriptive Mineralogy. Lectures and laboratory work. *Three hours a week.*
- 15-16. Industrial and Engineering Chemistry. Lectures and laboratory work. Visits to industrial establishments. *Two hours a week. Credit, 2 units.*
- 17-18. Research work in Theoretical or Applied Chemistry. Investigation of some subject in pure or applied chemistry. Laboratory work and reading of original papers and memoirs. Preparation of thesis.

BOTANY.

Professor Trelease, Assistant Professor Coulter, Dr. Harris and Mr. Life.

Three times a week unless otherwise stated.

Credit, 3 units, unless otherwise stated.

- 1-2. Biology: A lecture and laboratory course devoted to the consideration of life processes as exemplified in the animal and plant kingdoms. *Two lectures and four hours of laboratory work each week throughout the year. Open to all classes. Credit, 6 units.*
- 1-2. Botany: Elementary Morphology and Organography. Laboratory work, with supplementary lectures and quizzes, dealing with the form and structure of plants, with special reference to their life processes, including ecological adaptations, and to Systematic Botany.

- 3-4. Cytological Technique. Laboratory work in the cultivation and examination of bacteria and the methods of histological investigation, combined with a study of the principal types of plant anatomy,—specially adapted to the needs of students intending to study medicine.
- 5-6. Plant Physiology, including Ecology. Laboratory work, with supplementary lectures.
- 7-8. Systematic Botany. Laboratory and field work, with supplementary lectures, dealing with the comparative structure and the classification of plants.
- 9-10. Plant Pathology and Applied Mycology. Laboratory work.

The close connection of the School of Botany with the Missouri Botanical Garden insures to advanced students, some of whose work is done at the Garden, the privilege of using the unexcelled botanical library of that institution, which comprises over 42,000 books and pamphlets, including full sets of many of the most important serial publications as well as current treatises. The plant houses at the Garden offer opportunity for experimental work in plant physiology and pathology, and these and other studies are facilitated by the large herbarium of the Garden, comprising over 465,000 sheets of specimens, and the collection of living plants which at present includes over 11,000 species or varieties represented by a considerable number of individuals.

ZOÖLOGY.

Assistant Professor Abbott.

Credit, 3 units, unless otherwise stated.

- 1-2. Biology: A lecture and laboratory course devoted to the consideration of life processes as exemplified in the animal and plant kingdoms. *Two lectures and four hours of laboratory work each week throughout the year. Open to all classes. Credit, 6 units.*

3. **Zoölogy: Comparative Morphology of the Invertebrates.** A laboratory course with lectures, devoted to a study of the structure and relationships of a selected series of invertebrate types, as an introduction to the study of Zoölogy. May be taken in connection with Biology 1. *One lecture and five hours of laboratory work a week.*
4. **Zoölogy: Comparative Morphology of the Vertebrates.** Continuation of Zoölogy 3, from the vertebrate side; dissection of typical chordates, with lectures on Comparative Anatomy and Phylogeny. *One lecture and five hours of laboratory work a week.*
5. **Zoölogy: Vertebrate Embryology.** Laboratory work based on the Chick, Salamander and Pig. The development of the chief systems of organs is taken up comparatively in order to supplement the work of Zoölogy 4. *One lecture and five hours of laboratory work a week. Credit, 2 units. Prerequisite, Zoölogy 3 and 4. First term.*

Students who complete satisfactorily Zoölogy 5 will receive equivalent credit in the Medical School.
6. **Zoölogy: Advanced Embryology.** Lectures on the problems and theories of General Embryology, with especial regard to the physiological processes involved in development. The laboratory work will consist in a comparative study of some system of organs in different groups, such as the urino-genital system, the development of the ear, etc., or else in a repetition of some piece of original work as a preparation for research work. *Two lectures and one afternoon of laboratory work. Second term. Courses 5 and 6 alternate with 7 and 8.*
7. **Zoölogy: General Physiology.** This course will begin with a series of experiments on the structure of protoplasm, and its relations to chemical and physical changes. Then will follow a study of the fundamental functions of organisms, and their reactions to all forms of stimuli. The instincts and general behavior of animals will be studied in the laboratory by means of simple experiments designed to illustrate and explain, as far as possible, the phenomena as they

occur in nature. Prerequisite, Zoölogy 3 and 4. First term. *Two lectures and four hours of laboratory work a week. Credit, 2 units.* Offered for 1905-6.

8. Zoölogy: Special Physiology. Lectures on Mammalian Physiology, together with recitation work on Human Physiology, with Schenck and Gürber's "Outlines" as a text. In the laboratory the more important experiments on digestion, respiration, excretion, contraction of muscle, and the physiology of the blood and of the nervous system, will be performed. Prerequisite, Zoölogy 3 and 4. Second term. *Credit, 3 units. One lecture, one recitation and five hours of laboratory work a week.* Students who complete satisfactorily Zoölogy 5 and 6 will receive equivalent credit in the Medical School. Offered for 1905-6.
9. Bionomics. A lecture course devoted to a consideration of the general principles of Biology and the theory of Organic Evolution. A thesis on some selected topic to be prepared by each student. Open to all except Freshmen. *3 units' credit.*

GEOLOGY.

Adjunct Professor Hambach. Three times a week.

Credit, 1 unit.

1. General Course.
- 2-3. Elementary and Systematic Geology.
- 4-5. Palæontology.
6. Petrography.

DRAWING.

Assistant Professor Holmes Smith.

1. Freehand Drawing. The observation and analysis of form. Freehand drawing in outline of objects and groups of objects, both from the objects themselves, from memory, and from description. The elements of perspective as applied to freehand drawing. *Six hours a week. Credit, 2 units.*

2. The use of drawing instruments. The construction and use of scales. Projection of simple solids. Single line lettering. *Three hours a week. Credit, 1 unit.*
3. Geometrical Drawing. Those problems in geometrical construction that are needed in descriptive geometry, structural drawing and machine design. Practical Freehand Lettering. *Four hours a week. Credit, 1 unit.*
4. Machine Drawing. The making of preliminary sketches, with measurements, of machines and parts of machines. Working Drawings. Tracings. Blue Printing. Isometric Drawing. Practical Freehand Lettering. *Six hours a week. Credit, 2 units.*

TOOL THEORY AND USE—THE MECHANIC ARTS.

1. Shop: *Woodwork.* The Theory and Use of Bench and Turning Tools. Methods of joining, polishing and finishing woods. Plain, face-plate and chuck turning. *Three hours per week for one term.*
2. Shop: *Construction and Use of Patterns.* Pattern making, molding in sand, core making, casting in plaster, lead and alloys. *Three hours per week for one term.*
3. Shop: *Metal Forging.* Theory and Use of the Forge. Drawing, bending, upsetting, splitting, lead, iron and steel. Welding, tempering, construction of forge tools, and Standard lathe tools. *Three or four hours per week for one term.*
4. Shop: *Metal Fitting.* Use of Cutting Tools in the Machine Shop. Lathes, drills, planes, jumper, vise-work. *Four hours per week for one term.*
5. Shop: *Metal Fitting Continued.* Screw-cutting. Use of Universal milling machine, and construction of project. *Six hours per day for six days immediately after Commencement Day.*

CIVIL ENGINEERING.

Professor Van Ornum and Mr. Goodwin.

1. Elementary Surveying. The use and adjustment of all the ordinary surveying instruments; land surveying; problems in linear surveys, in laying out railway curves, etc.; topographical surveying by the transit and stadia method, and also by the plane table. *Two recitations and six hours field practice a week.*
- 2-3. Surveying in the Field. *Three weeks devoted continuously to field practice.* This practice includes the topographical survey of a considerable tract of ground with an irregular surface, for the purpose of mapping it with five-foot contours, this survey being based on a system of triangulation and levels which forms a part of the work of the survey. A hydrographic survey, with locations by one of the most approved methods, is made, and a railroad line is also located from a contour map which is made in the field, and the earth-work upon it computed. Determinations are also made by the students for latitude, time and azimuth, and various other special problems are worked out practically. For this work the class goes to a suitable point at a distance from the city the third Monday before the beginning of the college year. The location of these surveys, in the past few years, has been Hot Springs, South Dakota; Lock Haven, Illinois; Powers Lake, Wisconsin; and Arcadia and Ozark, Mo. A map of this survey is drawn after return from the field. While St. Louis and vicinity offer unusual opportunities for the student in Civil Engineering to observe processes of manufacture of engineering materials and the design and details of structures, still advantage is taken of this summer trip to visit other similar points of interest, such as blast furnaces, rolling mills, Portland cement works, steel works, bridges, etc., etc.
4. Higher Surveying. Hydrographic, mining, city and geodetic surveying, with the mathematical principles involved and the practical methods of operation used in the field; earth-work computations, etc. *Three hours a week.*

5. Drawing. To accompany courses 2 and 4. Also, visits to engineering works. *Nine hours a week.*
6. Engineering Materials. A review of the principles of mechanics relating especially to the strength of materials, both inside and beyond their elastic limits, together with the description of the processes of manufacture and methods of testing the strength of materials, and a discussion of the essential properties of the more common materials of engineering construction. *Three hours a week.*
7. Testing Laboratory Practice. Experimental tests made by the students on the strength of the various kinds of engineering materials. *Six hours a week.*
- 7a. Testing Laboratory Practice. Experimental tests of the strength of the more usual engineering materials. For students in mechanical and electrical engineering, and architecture. *Three hours a week.*
8. Stresses in Framed Structures. Analytical and graphical determinations of stresses in various styles of roof trusses and of highway and railway bridges for distributed and concentrated, fixed and moving loads. *Three hours a week.*
9. Structural Drawing. To accompany course 8. Also, visits to engineering structures. *Nine hours a week.*
10. Hydraulics. Hydrostatic and hydraulic theory, with the application of principles developed to the flow of water through orifices, pipes, channels, etc.; the determination of water power; the measurement of velocities and discharge. *Three hours a week.*
11. The Designing of Framed Structures. An analytical study of the principles involved in the designing of the general and detail portions of the more common styles of bridges and roofs. *Three hours a week.*
12. Structural Design. Work in the draughting room to accompany course 11, and involving complete details. Also, examinations of engineering structures. *Nine hours a week.*

13. **Water and Sewerage Systems.** The collection and distribution of potable waters, as modified by various conditions of supply and service. The practical designing of systems of sewerage and drainage. Methods of sewage disposal. Water rates and special assessments. *Three hours a week.*
14. **Railway Engineering.** Reconnaissance, preliminary and location surveys considered in detail; the economic theory of railway location; railway construction and maintenance of way; standards of permanent construction. *Three lectures a week.*
15. **Roads, Streets and Pavements.** The location, drainage, construction and maintenance of streets and roads; consideration of the different paving materials in connection with their particular characteristics and their adaptability and adequacy under various conditions of service; the cost and life of pavements. *Three lectures a week.*
16. **Irrigation Engineering.** The principles and practice involved in the design, construction and operation of irrigation structures and systems; irrigation administration and economics. *Three lectures a week.*
17. **Masonry Structures, Tunneling and Explosives.** The theory of design and the construction of foundations, retaining walls, dams, arches, culverts, bridge piers, etc., together with the study of materials involved. Methods of tunneling through different materials. The nature and use of explosives. *Three hours a week.*
18. **Contracts and Specifications.** The law of contracts as applicable to engineering, together with typical forms of specifications. *One hour a week.*
19. **Water and Sewage Purification.** A course of four weeks on the sanitary analysis of water and sewage in the Chemical laboratory, followed by a study in detail in the Civil Engineering department of methods and adequacy of different systems of water and sewage purification. Students intending to elect this course must elect Bacteriology for the preceding term. *Three lectures a week.*

20. **Suspension, Cantalever, Arch and Lift Bridges.** Analytical study of stresses, and principles governing the design and erection of these styles of structures; consideration of typical examples of such bridges. *Three lectures a week.*
21. **Steel Frame Buildings.** The various systems of construction for tall office buildings analytically considered, with the principles and details of design of this increasingly important class of structures. *Three lectures a week.*
22. **Reinforced Concrete Construction, etc.** Advanced work in Engineering Materials. The principles involved in the design of structures built of steel and concrete in combination; the details of the most important systems of such construction. *Three lectures a week.*
23. **Harbors, Rivers and Canals.** The regimen of rivers; tides and tidal currents; the application of hydraulic and structural principles to the design, construction and maintenance of harbors, rivers and canals. *Three lectures a week.*
24. **Engineering Design.** Draughting and design supplementary to courses 13 to 23. Engineering reports and projects. *Nine hours a week.*
25. **Graduation Thesis.** A complete study or design, involving original investigation or experiment.

MECHANICAL ENGINEERING.

Professor Fernald and Mr. Vose.

1. **Elements of Mechanism.** The principles of mechanism, showing the geometrical construction and proper forms for rolling curves, gear teeth, cams, link work and trains of mechanism. *Three hours a week.*
Stahl and Wood: Elements of Mechanism.
2. **Machine Design.** The application of the principles involved in designing shells, tubes, plates, machine frames, springs, fastenings, riveted joints, sliding bearings, etc. *Three hours a week.*
Benjamin: Notes on Machine Design.

3. Machine Design. A continuation of Mechanical Engineering 2. The application of the principles involved in designing journals, pivots, step bearings, ball and roller bearings, shaftings, pulleys, fly-wheels, belt and rope transmission. *Three hours a week.*

Benjamin: Notes on Machine Design.

4. The Steam Engine and its Accessories. Mechanism; condensing and non-condensing engines; simple and compound engines; valves and valve gearing; governors; foundations and bed plates; accessories; piping for engine and attachments. *Three hours a week.*

Wm. Rippey: Steam Engine Theory and Practice.

5. Drawing. Work in the drawing room, including problems in gear construction, cam and link motions, to accompany Mechanical Engineering 1. *Three hours a week.*

6. Drawing and Design. Practice in making working drawings of machinery and structural work, including tracing and blue-printing, and followed by the design of simple forms of machinery. *Six hours a week.*

7. Mechanical Laboratory and Excursions. Calibration of instruments and methods of using various forms of brakes. Visits to manufacturing establishments. *Three hours a week.*

8. Mechanical Laboratory and Excursions. Oil testing; indicator practice; valve setting. Visits to manufacturing establishments. *Six hours a week.*

- 8a. Mechanical Laboratory and Excursions for Electrical Engineering students. Similar to Mech. Eng. 8. *Three hours a week.*

9. Thermodynamics. Laws of fundamental equations; perfect gases; saturated and superheated vapors; compressed air; flow of fluids; application of thermodynamics to injectors; hot air and gas engines; steam engines, and refrigerating machines. *Three hours a week.*

Peabody: Thermodynamics of the Steam Engine.

10. Steam Engine Design. The application of the principles involved in designing the various parts of steam engines. *Lectures. Three hours a week, first half term.*
11. The Steam Boiler and its Accessories. General construction; types; setting; accessories and appliances; care and management; inspecting and testing; explosions. *Three hours a week, second half term.*

Parsons: Steam Boilers.

12. Boiler and Chimney Design. The application of the principles involved in designing steam boilers. *Lectures. Three hours a week, first half term.*
13. Heating and Ventilating. The principles of ventilating; amount of heat required for warming; radiating surfaces; hot-water heaters; steam and hot-water systems; exhaust and vacuum steam heating systems; hot air heating; electrical heaters; mechanical ventilators; systems of piping; settings and appliances; specifications and contracts. *Three hours a week, first half term.*

Carpenter: Heating and Ventilating Buildings.

14. Factory Systems. Consulting and manufacturing engineer; production; cost of production; firm; corporation; time and cost keeping; labor systems; premium plans; specifications; contracts, etc. *Lectures. Three hours a week, second half term.*
15. Drawing. Steam Engine Design. Work in the drawing room to accompany Mechanical Engineering 10. *Nine hours a week.*
16. Drawing. Boiler and Chimney Design. Work in drawing room to accompany Mechanical Engineering 12. *Three hours a week.*
17. Mechanical Laboratory and Excursions. Use of throttling and separating calorimeters; practice in handling and caring for boilers; boiler testing. Visits to power plants and pumping stations. *Six hours a week.*

18. Mechanical Laboratory and Excursions. Practice in handling and caring for engines; condenser testing; steam and gas engine testing; pump testing. Visits to power plants and pumping stations. *Three hours a week.*
19. Thesis. A complete study or design involving original investigation or experiments. *Nine hours a week.*
20. Hydraulic Motors. Work derived from moving vanes, revolving vanes and revolving tubes. Overshot, breast and undershot wheels; impulse wheels; turbines; theory of turbines, both reaction and impulse, together with design. *Two hours a week, first half term.*

Merriman: A Treatise on Hydraulics.

21. Locomotive Engineering. Train resistances, traffic obligations; road bed and alignment; tractive power; construction of fire-box, smoke-box, etc.; design and location of cylinders; driving wheels, frame, springs and equalizers; tender and tank capacities; signal systems; water and coaling stations; testing department. *Lectures. Three hours a week, second half term.*

ELECTRICAL ENGINEERING.

Professor Langsdorf.

1. General introduction to the theory of electrical machinery. Lectures, recitations and problems on the laws of the magnetic circuit. Characteristics of direct current generators and motors. *Three hours a week.*
2. Continuation of course 1. Design, construction and management of generators and motors. Introduction to the theory of alternating currents. *Three hours a week.*
3. Laboratory work involving the calibration of ammeters, voltmeters, and wattmeters, and the determination of the characteristics of series, shunt and compound wound generators and motors. *Six hours a week.*

- 3a. Laboratory work similar to that of course 3, for students in Mechanical and Chemical Engineering. *Three hours a week.*
4. Advanced course in the theory and design of electrical machinery, the subject being treated in much greater detail than is possible in courses 1 and 2. *Three hours a week.*
5. Continuation of course 4. Theory of alternators, transformers, induction and synchronous motors, and the rotary converter. *Three hours a week.*
6. Work in drawing room to accompany course 4. Detail design of a specified generator or motor. *Six hours a week.*
7. Work in drawing room to accompany course 5. Design of some specified type of alternating current machinery. *Three hours a week.*
8. Laboratory work involving experiments with direct and alternating currents. *Nine hours a week.*
9. Continuation of course 8. Commercial methods of testing. *Six hours a week.*
10. Lectures, recitations and problems on systems of electric lighting, and the transmission of power; incandescent and arc lighting; calculation of distributing net-works. *Three hours a week.*
11. Lectures and recitations on street railway working. The central station, feeder system, track and rolling stock; heavy electric railroads. *Three hours a week, second half of term.*
12. The preparation of estimates and specifications for engineering installations, such as central stations, factory and office-building plants; conducted in the form of conferences. *Two hours a week, second half of term.*
13. The preparation of a thesis on some subject connected with the work of the department, and consisting of the complete investigation of some existing installation, the design and construction of some kind of electrical machine or instrument, or of an original research.

14. Continuation of course 10. Photometry and illumination. *Three hours a week, first half of term.*

ARCHITECTURE.

Professor Mann, Mr. McGoodwin and Mr. Spiering

- 1a. Analytical study of the architecture of ancient Egypt, Assyria, Persia, Greece and Rome; mainly the two latter. *Sophomores, first term. One illustrated lecture per week. Drawing three hours a week.*

Professor Mann.

- 1b. Analytical study of the architecture of the Renaissance. Classic revivals of the 15th, 16th, 17th and 18th centuries. *Sophomores, second term. One illustrated lecture per week. Drawing three hours a week.*

Professor Mann.

- 1c. Analytical study of the architecture of the Middle Ages. Christian architecture of Rome and Byzantium and influences from these localities on the later Romanesque architecture. The origin and development of pointed architecture. *Juniors, first term. One illustrated lecture per week. Drawing three hours a week.*

Professor Mann.

- 1d. Analytical study of contemporary architecture. Architects and their works; present day influences and tendencies. *Seniors, first term. One illustrated lecture a week.*

Professor Mann.

- 2a. Elementary Design. Study of the principles of design, as applied to simple architectural compositions, illustrating the use of various architectural elements. Instruction in the rendering of architectural subjects. *Sophomores, first term. Fifteen hours a week.*

Mr. McGoodwin.

- 2b and 2c. Design: A continuation of the work outlined for the first term of the Sophomore Year (2a), applied to somewhat more advanced problems. *Sophomores, second term. Eight hours. Juniors, first term. Twelve hours a week.*

Mr. McGoodwin.

- 2d and 2e. Advanced Design: A continuation and development of 2b and 2c. Problems in original design requiring from four to six weeks for completion; also frequent eight-hour sketch problems. *Juniors, second term. Eighteen hours. Seniors, first term. Thirty hours a week.* Professor Mann.
- 3a, 3b, 3c and 3d. Freehand drawing from the antique and from the draped model. *Sophomores, first and second terms, and Juniors, first and second terms. Four hours a week.* Professor Mann.
- 3e and 3f. Drawing from life. *Seniors, first and second terms. Four hours a week.*
- 4a and 4b. Building Construction. Constructive details, methods and materials. Preparation by the students of a full set of working drawings of some small building. *Juniors, first and second terms. One illustrated lecture each week. Three hours' drawing.* Mr. McGoodwin.
- 5a and 5b. Elements of Architecture. Consideration of the influence of construction, utility and beauty upon the character and form of the decorative details of architecture. Systematic study of various types of different details and motives. *Sophomores, first and second terms. One illustrated lecture a week.* Mr. McGoodwin.
- 5c and 5d. Theory of Design. Principles of architectural composition in plan and elevation. Utilitarian and æsthetic considerations. Character, scale and proportion. Requirements of special classes of buildings. Discussion and exercise in the analysis of a programme. *Juniors, first and second terms. One lecture a week.* Professor Mann.
- 6a. Shades and Shadows and Stereotomy. Special problems in the application of principles of geometry to the tracing of shades and shadows in architectural forms. The tools and methods used in cutting stone. The making and marking of patterns, setting plans, etc.; the solution of some of the more difficult geometrical problems that commonly recur in stone cutting. *Sophomores, second term. One lecture; three hours' drawing each week.* Mr. McGoodwin.

- 6b. Perspective. Principles of perspective applied to architectural subjects. The practical manipulation of perspective drawings. *Juniors, first term. One lecture; three hours' drawing each week. Mr. McGoodwin.*
- 7a and 7b. Water color drawing, with especial reference to conventional and sketch rendering of architectural subjects. *Juniors, first and second terms. Three hours first and second terms. Professor Mann.*
8. Building Sanitation. Sanitary aspects of ventilation. Building drainage; plumbing methods and materials; plumbing fixtures. Disposal of sewage on country places. *Juniors, second part of second term. One lecture a week. Professor Mann.*
- 9a and 9b. Modeling in clay. *Seniors, first and second terms. Three hours a week.*
- 10a. Specifications and Contracts. Analysis of the usual forms of building contracts. Study of cases at law hinging upon usual contract clauses. Specification writing. Specifications as part of the contract. *Seniors, first term. One lecture a week. Professor Mann.*
- 10b. Practice of Architecture. The general relations and responsibilities of the architect. A discussion of general problems which the young architect first meets when entering independent practice. *Seniors, second term. One lecture a week. Professor Mann.*
11. Thesis. An extended problem in design, accompanied by structural drawings, technical descriptions and specifications. *Seniors, second term. Thirty hours a week. The Faculty at large.*
- 12a and 12b. Summer Work. Preparation in the summer vacation between the Sophomore and Junior and the Junior and Senior years of a certain number of acceptable sketches or measured drawings in accordance with a program issued at the end of each year, or, at the choice of the student, not less than six weeks' work in an architect's office the first summer or eight weeks the second summer.

COLLEGE COURSES IN THE MEDICAL DEPARTMENT.

In addition to the above, the following courses given in the Medical Department of the University are open to students in the College, and will be credited towards a medical degree for those students who enter the Medical College later.

ANATOMY.

Anatomy is taught mainly in the laboratories and extends throughout the first four semesters.

The courses are arranged as follows:—

- a. Introductory lectures on the vertebrate type accompanied by dissection of the dog-fish; lectures on the locomotory apparatus with demonstrations of selected joints and muscle groups. One hour a week in the first semester. *Prof. Terry.*
- b. Practical Anatomy: Dissection of the muscles, joints and peripheral nerves. Six hours a week from October 16th to January 14th. *Dr. Blair, Dr. Coughlin and assistants.*
- c. Osteology: Study of the skeleton accompanies Course B, the members of the class spending 6 to 8 hours a week in modeling the bones in clay. *Dr. Blair.*
- d. Histology: Cell, epithelial, connective and nerve tissues; the minute anatomy of bones, muscle and joint structures. Two hours a week in the first semester. *Prof. Terry.*
- e. Vertebrate Embryology: Study of the ovum, maturation, cleavage, gastrulation, germ layers, development of bone, joints, spinal cord and nerves. Three hours a week in first semester. *Prof. Terry.*
- f. Practical Anatomy: Dissection of the limbs, chest and abdomen. This is carried out according to a schedule, a definite amount of work being given for each day and the students all working upon the same region at one time. Examination at the end of the week. Twelve hours a week from January 16th to May 12th. *Dr. Blair, Dr. Coughlin and assistants.*

- g.* **Organology:** This course, accompanying Anatomy *f*, deals with the structure and development of the vegetative organs. Fresh material from the slaughter-house, corrosions and wax reconstructions are employed in teaching the subject. Six hours in the second semester. *Prof. Terry.*
- h.* **Nervous System and Sense Organs:** The dissection of the head and neck and the study of the development, macroscopic and fine structure of the brain, cord and sense organs are carried on during the third semester. Six hours a week. *Prof. Terry and assistants.*
- i.* **Applied Anatomy:** Three hours a week in the fourth semester, dealing with the application of anatomy in the practice of medicine. *Prof. Tupper.*

PHYSIOLOGY.

- a.* **Physiology of the Cell:** One lecture a week; second semester.
- b.* **Physiology of the Blood, of Muscle, Nerve, Spinal Cord and Peripheral Nerves, Autonomic Nervous System, Circulation, Respiration, Digestion, Metabolism, Excretion, Animal Heat, Central Nervous System and Special Senses:** Three lectures, conferences or demonstrations, and three hours laboratory work each week; third and fourth semesters.

The class is divided into five sections, each section being required to spend one afternoon a week in the laboratory. The apparatus used is that designed by Professor W. T. Porter of Harvard.

BACTERIOLOGY.

- f.* **Lectures on Bacteriology.** One hour in fourth semester. *Prof. Tiedemann.*
- g.* **Laboratory course in Bacteriology.** Four hours in fourth semester. *Prof. Tiedemann and Dr. Mills.*
- h.* **Additional work may be taken in 6th and 8th semesters as elective courses.** *Prof. Tiedemann.*

HYGIENE AND SANITARY SCIENCE.

The course in Hygiene and Sanitary Science is designed to bring clearly and concisely before the student those fundamental hygienic principles which enable the physician to intelligently combat disease-producing conditions in the individual patient and his surroundings, or in communities at large. The course is conducted by a series of lectures and explanatory quizzes, supplemented, wherever possible, by illustrations and the exhibition of the various apparatus used in sanitary work.

FORENSIC MEDICINE.

Courses of Lectures, comprising the following subjects, will be given during the eighth semester, 3 hours a week:—

Symptoms and Treatment of Poisoning, 4 lectures; Microscopy of Blood Stains, Hair, etc., 2 lectures by *Prof. Budgett*; Abortions, Diagnosis of Recent Labor, Rape, etc., 4 lectures by *Prof. Schwarz*; Legal Aspects of Insanity, Injuries to the Nervous System, Alcoholism, Sunstroke, etc., 3 lectures by *Prof. Fry*; Legal Aspects of Traumatism and Surgical Injuries, 2 lectures by *Prof. Tuholske*; Post-mortem Examinations, 2 lectures by *Prof. Tiedemann*; Medical Jurisprudence, 12 to 15 lectures by *Prof. Nagel*.

REQUIREMENTS FOR ADMISSION TO THE UNDERGRADUATE DEPARTMENT.

Candidates for admission to the College and School of Engineering and Architecture will present themselves for enrollment or examination on Monday, June 12, 1905, in University Hall, at 9 o'clock a. m. Candidates who cannot be present in June may present themselves on Tuesday, September 26th.

Students may enter either on certificate or by examination.

ENTRANCE ON CERTIFICATE.

Graduates of certain schools will be admitted without examination, provided they bring certificates from the principal that they have met the requirements as printed below. These schools have been inspected and examined by a representative of the Faculty and placed upon the approved list. Additions will be made to this list as rapidly as schools apply for such recognition and are found to be qualified.

Candidates for admission presenting certificates signed by the principals of the following schools will be admitted without examination to the Freshman Class of the *College*:—

Smith Academy, St. Louis.

Mary Institute, St. Louis.

Hosmer Hall, St. Louis.

Central High School, St. Louis.

City High School, Carthage, Mo.

Kirkwood High School, Kirkwood, Mo.

Webster Groves High School, Webster Groves, Mo.

Central High School, Kansas City, Mo.
Westport High School, Kansas City, Mo.
St. Joseph High School, St. Joseph, Mo.
Chillicothe High School, Chillicothe, Mo.
High School, Springfield, Mo.
Blees Military Academy, Macon, Mo.
High School, Moberly, Mo.
Atlantic High School, Atlantic, Iowa.
City High School, Burlington, Iowa.
Ottumwa High School, Ottumwa, Iowa.
Plattsmouth High School, Plattsmouth, Neb.
Township High School, Evanston, Ill.
Township High School, Joliet, Ill.
East St. Louis High School, East St. Louis, Ill.
High School, Alton, Ill.
Evansville High School, Evansville, Ind.
High School, Hannibal, Mo.
High School, Carthage, Mo.
High School, Fort Smith, Ark.
High School, Taylorville, Ill.
High School, Bement, Ill.

Candidates for admission presenting certificates signed by the principals of the following schools will be admitted without examination to the Freshman Class of the *School of Engineering and Architecture*:—

Smith Academy, St. Louis.
Central High School, St. Louis.
Manual Training School, St. Louis.
Central High School, Kansas City, Mo.
Manual Training High School, Kansas City, Mo.
High School, St. Joseph, Mo.
Township High School, Evanston, Ill.
Township High School, Joliet, Ill.
High School, East St. Louis, Ill.
High School, Cairo, Ill.

High School, Chillicothe, Mo.
 Bles Military Academy, Macon, Mo.
 High School, Kirkwood, Mo.
 High School, Webster Groves, Mo.
 High School, Atlantic, Iowa.
 High School, Plattsmouth, Neb.
 High School, Evansville, Ind.
 High School, Pine Bluff, Ark.
 Westport High School, Kansas City, Mo.
 High School, Springfield, Mo.
 High School, Moberly, Mo.
 High School, Carthage, Mo.
 High School, Alton, Ill.
 High School, Trenton, Mo.
 High School, Ottumwa, Iowa.
 Township High School, Murphysboro, Ill.
 High School, Burlington, Ia.
 High School, Fort Smith, Ark.
 High School, Hannibal, Mo.
 High School, Taylorville, Ill.
 High School, Bement, Ill.

EXAMINATION FOR ADMISSION TO THE COLLEGE.

Candidates not presenting certificates of admission are required to pass a written examination. This examination will cover sixteen units†; thirteen of these are required, and three are optional, as follows:—

(a) Required:—

1. *English*, 3 units.
2. *Mathematics* (Algebra, through quadratics; Plane Geometry), 3 units.
3. *Latin*, 3 units.
4. *French or German or Greek*, 2 units:

†A unit means one year's work of not less than four forty minute periods each week.

5. *History* (Ancient, or Mediæval and Modern, or English or American), 1 unit.

6. *Science* (Physics or Chemistry or Botany or Zoölogy or Physiology), 1 unit.

(b) Optional (3 units to be offered from this list):—

1. †*Latin* (advanced), 1 unit.
2. §*Greek* (advanced), 1 unit.
3. *Science* (additional), 1 unit.
4. *History* (additional), 1 unit.
5. *Civics* and *Economics*, 1 unit.
6. *Solid Geometry*, 1 unit.
7. *Plane Trigonometry*, 1 unit.

EXAMINATION FOR ADMISSION TO THE SCHOOL OF ENGINEERING AND ARCHITECTURE.

Candidates not presenting certificates of admission are required to pass a written examination. This examination will cover fifteen units; twelve of these are required and three are elective. A "unit" is defined on page 89 in a foot-note.

(a) Required:—

1. *Mathematics* (Algebra, Plane and Solid Geometry), 4 units.
 2. *English*, 3 units.
 3. *French, German, or Latin*, 2 units.
 4. *Physics* or *Chemistry*, 1 unit.
 5. *History*, 2 units.
- Total, 12 units.

§Candidates presenting Greek must present 3 units in order to enter Greek 1 in the College courses.

†Candidates presenting Latin must present the 4 units in order to take Latin 1 in the College courses.

Where "conditions" do not exceed 2 units, candidates may be admitted, making up "conditions" subsequently as may be arranged.

(b) Elective (3 units to be offered from this list) :—

1. *Biology*, 1 unit.
2. *Zoölogy*, 1 unit.
3. *Botany*, 1 unit.
4. *Physiology*, 1 unit.
5. *Advanced French* or *German* [the same language as offered under (a)], 1 unit.
6. *Civics* and *Economics*, 1 unit.
7. *Chemistry* or *Physics*, 1 unit.
8. *Drawing*, 1 unit.

The examination will occupy two days and will be entirely in writing.

Candidates for admission to the Undergraduate Department may, at their option, take the entire examination at one time; or they may divide it between two years, or between June and September of the same year, provided they are prepared at the first examination in not less than four of the subjects named in the requirements for admission.

All candidates for admission are required to furnish testimonials of good moral character, and students from other collegiate institutions, who expect to enter in advance of the Freshman Class, are required to present certificates of honorable dismissal.

ENGLISH.

1. *Grammar*. A knowledge of technical terminology and of syntax—such essentials as may be found in Reed and Kellogg's *Higher Lessons in English*.

2. *Rhetoric and Composition*. The ability to write correct, clear and coherent English; a knowledge of the principles of capitalization, punctuation, sentence structure, and paragraphing. Satisfactory text-books are such as Hill's *Foundations of Rhetoric* (Harper's), and Herrick and Damon's *Composition and Rhetoric*.

3. *Literature.* The careful study of certain masterpieces; the reading of a number of assigned books. The candidate will be expected to have a definite knowledge of the subject-matter, an understanding of the literary form and the structure of the works suggested, together with a knowledge of the biography of the authors and some notion of the literary periods in which they lived. Particularly should the candidate be able to express a sensible opinion concerning any book which he has read. Books assigned for "reading" should be taken up with the aim of getting clearly in mind the style and the main features of the subject-matter, such as the plot, incidents and characters.

For candidates who present themselves in the year 1905-6, no definite assignments in literature are made; the following are suggested:—

(a) For careful study: Shakespere's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus* and *Lycidas*; Burke's *Speech on Conciliation with America*; and Macaulay's *Essays on Milton* and *Addison*.

(b) For reading: Shakespere's *Merchant of Venice* and *Julius Cæsar*; the Sir Roger de Coverley papers in *The Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *Princess*; Lowell's *Vision of Sir Launfal*; and Eliot's *Silas Mariner*.

Of candidates arriving in the years 1906-7, 1907-8, and 1908-9, preparation will be required upon the following books:—

(a) For careful study: Shakespere's *Julius Cæsar*; Milton's *L'Allegro*, *Il Penseroso*, *Comus* and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essay on Addison* and *Life of Johnson*.

(b) For reading: Shakespere's *Merchant of Venice* and *Macbeth*; the Sir Roger de Coverley papers in *The Spectator*; Irving's *Life of Goldsmith*; Coleridge's *Ancient Mariner*; Scott's *Ivanhoe* and *Lady of the Lake*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *Passing of Arthur*; Lowell's *Vision of Sir Launfal*; and Eliot's *Silas Mariner*.

Suitable text-books on English literature are such as those by Painter (Sibley & Co.), Pancoast (Holt), or Scudder (Globe Co.); and on American literature, those by Matthews (Am. Bk. Co.); Pancoast, Painter or Abernethy (Maynard, Merrill & Co.).

The examinations for entrance will consist largely of written work on subjects relating to the books assigned for reading, but questions may be asked on grammar, on rhetoric, and on the works assigned for "careful study." The ability to write good, simple English is absolutely essential.

Candidates are urged to read widely in the recognized English Classics instead of limiting their reading to the few selections studied in the class-room.

MATHEMATICS.

Elementary Algebra, to which the student should have given at least one and a half years of study, covers the text of modern books on Algebra as far as quadratics, the latter included. In the course of this work literal equations should be introduced, and general formulæ established and discussed. The factoring of most value is that which is done by inspection, and the least common multiple should generally be determined by inspection. Special stress should not be given to negative exponents, imaginary quantities, or discussions of zero and infinity. It is always well to teach the binominal theorem with positive integral exponents, and arithmetical and geometrical progressions. If possible, pupils should see that an equation involving both x and y may represent a straight line or a curve in a plane, and some practice should be had in drawing graphs. This may involve a few short lectures.

In Geometry any good text-book may be followed, and at least one year and a half should be allowed for Plane and Solid Geometry. Numerous original demonstrations should be required, and problems in construction should be frequent, executed with care and accurate workmanship. Pupils should have practice in varying the forms of figures used for demonstration. In Solid Geometry models should be used freely, in order to make clear the difference between figures in space and figures in a plane. Pupils should have abundant practice in computing areas and volumes connected with prisms, pyramids, cones and spheres.

In plane trigonometry the candidate must be familiar with the trigonometric functions both as ratios and geometrical lines connected with a circle of radius unity. He must be able to write readily the numerical values of all functions of such angles as 30° , 45° , 60° , 135° , etc., with

their proper signs. He must be able to derive formulæ for the sine and cosine of the sum and difference of two angles, of double angles, half angles, etc. He must be familiar with the theory and use of common logarithms of numbers and of trigonometric functions, and be able to solve plane triangles, deriving the necessary formulæ, using such mathematical tables as may be given him.

LATIN.

Candidates are examined as follows:—

I. (a) *Latin Grammar*. The inflections; the simpler rules for composition and derivation of words, syntax of cases and verbs; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive; so much prosody as relates to versification, versification in general, and the dactylic hexameter.

(b) *Latin Composition*. Translation into Latin of detached sentences and easy continuous prose based on Cæsar and Cicero. The examination will assume that the student has devoted the equivalent of one hour a week to Latin Composition. The student will be expected to mark quantities.

II. *Cæsar*. Any four books of Cæsar's Gallic War, preferably the first four.

III. *Cicero*. Any six orations from the following list, preferably the first six: The four orations against Catiline, Archias, the Manilian Law, Marcellus, Roscius, Milo, Sestius, Ligarius, the fourteenth Philippic. A passage for sight translation will form part of the paper.

IV. *Virgil*. The first six books of the Aeneid. Translation at sight.

The first three of these papers will be required of all candidates for admission. Candidates who intend to continue Latin in the College must present all four.

GREEK.

I. (a) *Greek Grammar*. The inflections of nouns and verbs; the principles of the syntax of nouns and of verbs; the structure of sentences in general, with particular re-

gard to relative and conditional sentences, and to indirect discourse; versification so far as applied to the dactylic hexameter.

(b) Greek Prose Composition: Consisting principally of detached sentences to test the candidate's knowledge of grammatical constructions.

The examination in Grammar and Prose Composition will be based on the first two books of Xenophon's *Anabasis*.

II. Xenophon: The first four books of the *Anabasis*.

III. Homer: The first three books of the *Iliad* (omitting II, 494—end).

I. (a), (b) and II. will be required of all candidates presenting Greek for admission. Candidates who intend to take Greek Course I., must present III. in addition.

Ball's "The Essentials of Greek" or White's "First Greek Book" is recommended as a preparation for the *Anabasis*.

In Greek Prose Composition, Jones' "Greek Prose Composition" or Woodruff's "Greek Prose Composition," first 40 exercises, is suggested.

GERMAN.

The aim of a two years' High School course such as will satisfy the entrance requirements in German to this University should be to give the student a thorough knowledge of the essentials of German grammar and facility in reading modern prose and poetry. The work should comprise:—

1. In the First Year: Careful drill in pronunciation; dictation; drill in the rudiments of grammar, *i. e.*, the inflections of noun, pronoun and verb; the use of prepositions, and the simplest rules of syntax; simple exercises in conversation; and the reading of from 75 to 100 pages of graduated texts, either from a reader or from editions of easy texts.

2. In the Second Year: A thorough review of the first year's work in grammar, supplemented by numerous exercises in translating from English into German; a further study of syntax; conversation, based upon the texts read; practice in the translation into German of easy variations upon the matter read, and also in the offhand reproduction,

sometimes orally and sometimes in writing, of the substance of selected passages; and the reading of from 150 to 200 pages of literature in the form of easy stories, plays, and historical sketches.

The pupil may best satisfy the requirement in grammar by the study of a simplified or condensed presentation such as that contained in Vos's "Essentials of German," which may in the second year be supplemented from other sources; those in translation from German into English by the close reading of some of the following texts: Wiedemann, *Biblische Geschichten*; next a collection of fairy tales, and, in addition, some of the following list: Zschokke, "Der zerbrochene Krug," Allen and Batt, *Easy German Stories*; Schuecking, "Die drei Freier;" Stifter, "Das Heidedorf," short stories by Baumbach, Seidel, Storm, Heyse; short plays, as: Wichert, "An der Majorsecke," Wilhelm, "Einer muss heiraten." For historical reading one of the short sketches by Freytag, *e. g.*, *Aus dem Jahrhundert "Friedrichs des Grossen,"* is recommended.

Examination in ADVANCED GERMAN for entrance to the School of Engineering: Candidates offering advanced German are expected to show, in addition to the above requirements, the ability to read with reasonable facility scientific German prose of a moderately difficult kind. This ability may be acquired by the careful perusal of "Scientific" German readers or of German text-books on Physics, Chemistry and Engineering.

FRENCH.

The usual two years' course in preparatory schools which will enable the student to satisfy the entrance requirements in this department should give the student a thorough knowledge of the elements of French grammar and a facility in reading easy modern French prose at sight.

1. During the first year, the work should comprise:—

A careful drill in pronunciation, the rudiments of grammar; regular and common irregular verbs; the ready use of personal pronouns, elementary rules of syntax; abundant exercises in grammar, the reading of from 100 to 150 pages of easy French, and writing French from dictation.

2. During the second year the work should comprise from 250 to 300 pages of easy modern French prose (stories, plays and historical sketches). Frequent memorizing of a few lines of French (prose or poetry) and conversation exercises on texts thus committed to memory; dictation; continued drill on the rudiments of grammar (adjectives, pronouns, irregular verbs, use of tenses, etc.).

As a mere suggestion the attention of teachers is called to the following texts as suitable for first and second year students:—

Bruno's "Le Tour de la France"; Angier's "Le Voyage de M. Lerrichon"; Malot's "Sans famille"; About's "Le roi des Montagnes"; Dumas' "La Tulipe Noire"; Sandeau's "M'elle de la Seigliere"; La Brete, "Mon oncle et mon cure"; Thiers' "La Campagne de Waterloo"; George Sand's "La Mare au diable"; Jules Verne (novels); Merimee's "Colombia."

Examination in **ADVANCED FRENCH** for entrance to the School of Engineering: Candidates offering advanced French are expected to show, in addition to the above requirements, the ability to read with reasonable facility scientific French prose of a moderately difficult kind. This ability may be acquired by the careful perusal of "Scientific" French readers or of French text-books on Physics, Chemistry and Engineering.

HISTORY.

Such text-books as the following, or their equivalents, are recommended:—

"Rome," Myers; "Greece," Myers; "The Middle Ages," Myers; "England," Montgomery; "United States," Fiske.

For the required and the additional units, any two of the above may be offered.

In history ability to interpret facts is of more importance than knowledge of mere details. The causes of events should be traced out and the significance of periods of history studied.

PHYSICS.

Students offering Physics for entrance must be familiar with the more important phenomena, and with the principles involved in their explanation.

They must be prepared to work simple numerical problems upon the laws of falling bodies; levers; upon the simple pendulum; upon phenomena of liquids and gases, including the determination of pressures; upon the density of solids and liquids by means of the principle of Archimedes; upon specific heats, and heats of fusion and vaporization; upon the relations involved in Ohm's law; in sound, and the principle of resonance in organ pipes; upon refraction and reflection and the size and position of virtual and real images due to mirrors and lenses. The student should also be familiar with the use of the vernier and with the metric system.

CHEMISTRY.

Students offering Chemistry must have had laboratory work as well as class-room instruction. They must be acquainted with the methods of preparation, and the chief physical and chemical properties of the more important nonmetallic and metallic elements, such as oxygen, hydrogen, nitrogen, carbon, sulphur, phosphorus, silicon, sodium, potassium, calcium, magnesium, zinc, copper, mercury, silver, aluminum, lead, tin, iron, manganese and chromium. They should be familiar with the chief compounds of these elements. They should have a knowledge of the composition of the atmosphere, of the nature of flames, of acids, bases, salts, of oxidation and reduction. They should understand the laws of combining proportion by weight and volume, also the laws of gas volumes (Boyle and Charles), and they should be able to make simple calculations involving these laws. More importance is attached to a practical acquaintance with chemical substance in the laboratory and to experimental verification of the quantitative laws of chemistry than to a knowledge of theories, such as the atomic and molecular hypotheses, theories of valence and structure, electrolytic dissociation, etc.

The laboratory and class-room work should be similar in scope to that given in Hessler & Smith's *Essentials of Chemistry*.

BIOLOGICAL SCIENCES.

Candidates offering credits in the Biological Sciences are expected to have devoted one full school year to the subject offered, with a minimum of three periods a week of laboratory work and two of recitations. Laboratory notebooks and drawings must be submitted, indorsed by the teacher, as the record of the student's own observations.

The examination will be divided into two parts: (a) a written test on general questions, and (b) a laboratory examination designed to test his practical knowledge and powers of observation.

BOTANY.

The candidate offering Botany as an entrance requirement must have had a full year's work in botany, two-thirds of which should be genuine laboratory work. This work should include a detailed study of types from all the chief divisions of the plant kingdom and should comprise the fundamental principles of plant morphology and the general laws of plant physiology.

In addition to these there should be sufficient knowledge of the methods of classification of the flowering plants to enable the candidate to make intelligent use of an analytical key, such as Gray's Manual of Botany. The work indicated above should be eminently practical in its nature, and the candidate must satisfy the examiner that his knowledge has been gained by actual investigation of the plant forms in the laboratory, supplemented by explanatory text or lectures.

BIOLOGY.

One-half year of Botany together with half a year of either Zoölogy or Physiology.

In general the requirements are the same as those for the separate subjects except that they are less extensive in each one. In Botany the equivalent of Coulter's "Plant Studies" or Bergen's "Foundations of Botany" will be required. It must also be shown that the knowledge of plants has been acquired from actual contact with the forms in the laboratory. In this laboratory work the candidate should have made personal use of the compound microscope.

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If Zoölogy is offered for the second half unit, at least four types must have been dissected in detail by the student himself. These should include an Annelid, a Mollusc, an Arthropod, and an Echinoderm or a Vertebrate. In addition, the student should have studied individually or else by demonstration *Paramœcium*, *Vorticella* and *Hydra*.

In case Physiology is offered, the equivalent of Colton's Physiology, with additional laboratory work, will be required. Especial emphasis should be laid on the physical and chemical principles underlying physiological phenomena, and the laboratory work should be so directed as to bring out such principles.

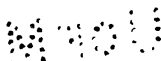
ZOÖLOGY.

Candidates offering Zoölogy as an entrance subject are expected (a) to have made careful and detailed study of at least ten morphological "types," including a representative from each of the following groups: Protozoa (*Amœba*, *Paramœcium*, *Vorticella*), Porifera, Coelenterata, Mollusca and Vertebrata (two forms); (b) to be familiar with the general principles and phenomena of animal biology as they are presented in Jordan and Kellogg's "Animal Life"; (c) to have supplemented the laboratory work by field trips, and to have some first hand knowledge of the habits and life conditions of common animals.

Much less value is attached to minute knowledge of structure or of names than to ability in correct observation and careful record.

PHYSIOLOGY.

Martin's "Human Body" (extended course) (or Stewart's Physiology) is recommended as a text-book. The laboratory work should be of such a nature as to employ the pupils' knowledge of the facts and processes of chemistry and physics in the explanation of physiological phenomena. While an understanding of the more important and general facts of anatomy is expected, the mere acquisition of technical names is considered of secondary importance. Under no circumstances is the work in Hygiene and Elementary Physiology done in the grammar school to be considered sufficient to offer for entrance credit, nor is a period of time less than one full year adequate to cover the ground.



CIVICS AND ECONOMICS.

(a) In Civics the candidate should have studied the organization of the village, city, township or county, and State government under which he has lived; the constitution of the United States and the operation of the government under the constitution; the election or appointment of and duties of public officers, the division of functions between National, State and Local Governments, the constitutional guarantees of the liberty of the citizen; a general knowledge of the origin of our political institutions, especially their connection with the English government.

(b) Economics. The nature of demand and supply, value and price under free competition and under monopoly, rent and diminishing returns, interest, profits, wages, the increase of capital and of the supply of labor, conditions affecting the efficiency of labor and of industry, international trade and protective tariffs, the elementary principles concerning money, credit, banking, bimetallism, and taxation. Laughlin's Political Economy and Fiske's Civil Government will serve to show the scope of the work required.

DRAWING.

Elementary Geometrical Drawing: Problems up to and including straight lines tangent to circles.

Orthographic Projection: The projection of simple solids upon three planes at right angles with each other.

Lettering: Simple single-line freehand lettering.

In both geometrical drawing, orthographic projection and lettering, greater value is placed upon clear, accurate work, finished in pencil, than upon work elaborately finished in ink. Candidates must also give evidence of a knowledge of the proper care of instruments.

In lieu of taking an examination, candidates may present carefully lettered drawings in pencil and also in ink.

ARRANGEMENT OF STUDIES IN THE COLLEGE.

FRESHMAN YEAR.

**Prescribed Studies.*

English, Courses 1 and 2.
German, Courses 1 and 2; or
French, Courses 1 and 2.

Elective Studies.

In addition to the prescribed studies, every Freshman is required to take each term elective studies amounting to *three full courses*.

The following courses are open to Freshmen during the year 1905-6:

Elementary Greek.
Greek, 1, 2.
Latin, 1, 2.
English, 1, 2.
German, 1, 2.
French, 1, 2.
History, 3, 4.
Mathematics, 1, 2, 3.
Drawing, 1, 2.
Physics, 1.
Chemistry, 1, 2.
Biology, 1, 2.
Botany, 1, 2.
Zoölogy, 1, 2.

A Freshman who is qualified to take a higher course in any study named above may do so, with the permission of the instructor in the course and the Dean of the College.

*The figures indicate the numbers of the Courses of Instruction. See p. 43.

SOPHOMORE YEAR.

The prescribed work of the Sophomore Year consists of:—
English, courses 3, 4, and *eight elective courses*, or an equivalent amount of courses and partial courses.

JUNIOR YEAR.

The prescribed work of the Junior Year consists of ten elective courses or their equivalent in courses and partial courses.

SENIOR YEAR.

Ten courses, all elective, are required in the Senior Year.

**COURSES FOR THOSE EXPECTING TO
BECOME TEACHERS.**

Students intending to become teachers are advised to take the following courses in Pedagogy and Psychology, which have been specially arranged to meet their needs:—

Psychology, 3 units; pedagogy, 6 units; philosophy, 6 units, and principles of evolution, 2 units.

The following groups of studies have been outlined by the various departments to meet the needs of students who wish to become teachers of special subjects in secondary schools:—

Greek:

Greek, 30 credits, of which 12 shall be courses 12, 15.
Latin, 15 credits, of which 3 shall be course 13.

It is recommended also that the candidate shall have taken Latin 5.

History of Art, course 1.
History of Greece.
History of Rome.

Latin:

Latin, 36 credits, of which 10 shall be courses 5, 13, 14, 14a and 15.

Greek, 15 credits, of which 3 shall be Greek 13.

History of Art, course 1.

History of Greece or Rome.

English:

English courses, 4, 11, 14, 23, 24, 27, 28, 30 and 32.

History, 3, 3a and 4.

German:

Those intending to teach German should present as a minimum prerequisite for entering the literary and philological courses, courses 1-4. These students will thus begin their undergraduate work with course 5, continuing in order through course 9. Those who speak the language may omit 7a and 8 or 8a, substituting for the two one advanced course beyond the minimum requirement given above. At least three of the advanced courses must be taken, and four if 7a or 8 is omitted.

French:

French, courses 7-14.

History, 3 and 4.

German, 1 and 2.

Greek, 13.

History of Art, 1 and 2.

A student should also have an elementary knowledge in Latin.

History:

History, courses 1, 2, 3, 4, 10, 11, 12, 13 and 14.

With these should be combined some work in Economics or Modern Languages.

Mathematics:

Mathematics, 1, 2a, 2b, 3, 4 and 5.

Astronomy, 1.

Spherical Trigonometry.

Physics, 1.

Drawing, 2.

Physics:

Courses 7 and 8, followed by 4 and 5.
Mathematics, 1-5.

Chemistry:

Chemistry, 30 units.
Physics, 18 units.
Biology, 16 units.
Mathematics, 18 units.

Botany:

Botany, 18 units.
Zoölogy, 9 units.
Physics, 6 units.
Chemistry, 6 units.

Zoölogy:

Zoölogy, 24 units
Botany, 9 units.
Chemistry, 9 units.
Physics, 9 units.

REGULATIONS REGARDING CHOICE OF STUDIES.

Every student is required to give notice in writing to the Dean of the College on or before the first day of each term of his choice of studies for that term.

Changes may be made only by permission of the Dean upon consultation with the Board of Advisers, to whom application must be made in writing, with a full statement of reasons.

No student is allowed to elect any course for which his previous training has not fully prepared him.

No student is allowed to elect more than the equivalent of five full courses, whose record falls below B in any course; nor more than six courses at any time without special permission from the Faculty.

No Freshman may elect more than five courses during the first term, except those who are making up entrance conditions by courses taken in the College.

Candidates for degrees on the unclassified list are not allowed to elect more than the equivalent of six courses in any one term.

COMMITTEE ON COURSES.

A standing Committee of five members is appointed annually by the Chancellor from the Faculty. This Committee passes upon all courses before they are recognized as courses of instruction for the degree of A. B., decides whether or not a course shall be given, and after consultation with the instructor how much credit shall be given for it. All action of this Committee is, however, subject to the approval of the Faculty.

The following constitute the Committee on Courses for the year 1904-5:—

Professors Keiser (Chairman), Heller, Van Ornum, Hall and Swift.

The Committee on Courses, with the Dean, also constitutes a Board of Advisers to guide students in the selection of courses of study.

DEFINITION OF A COURSE AND REQUIREMENT FOR GRADUATION.

In the reckoning of students' credits for graduation the unit of credit shall be either one hour of lecture or recitation a week for one term, or two hours of laboratory work a week for one term. It is assumed that each

hour of recitation or lecture shall involve approximately two hours of preparation, and each two hours of laboratory one hour of preparation on the part of the average student.

In cases where laboratory work done under the supervision of an instructor does not require outside preparation, three hours shall be the equivalent of the unit of credit.

The normal course in the College shall be reckoned as equivalent to three units of credit, but this shall not be so construed as to prevent instructors from giving courses of one, two, three or more units per week, subject to the approval of the Committee on Courses.

Until commencement of 1905, the number of units required for graduation shall be 114 or 38 courses; after 1905, the number of units required shall be 120 or 40 courses.

ARRANGEMENT OF STUDIES IN THE SCHOOL OF ENGINEERING AND ARCHITECTURE.

The Courses of Study are seven in number :—

- I. CIVIL ENGINEERING.
- II. MECHANICAL ENGINEERING.
- III. ELECTRICAL ENGINEERING.
- IV. CHEMICAL ENGINEERING.
- V. ARCHITECTURE.
- VI. ARCHITECTURAL ENGINEERING.
- VII. SCIENCE AND LITERATURE.

It will be seen farther on that the branches studied during the Freshman Year are the same for all the Courses. This is because they are the foundation studies upon which all technical and professional matters are based. The same command of mathematics, analytical and graphical; the same mastery of the principles of mechanics which underlie all engineering; the same knowledge of the elements of physics and chemistry; the same graphic skill; and the same facility in the use of English and in reading European technical books and journals;—is required whatever may be the ultimate choice in the line of study. It is therefore possible for a student to defer a decision as to the Course of Study he will finally take till the Sophomore or even the Junior Year. Some branches are common to all engineering students every year.

The arrangement of studies in the several Courses of Study varies from time to time as need arises. Nearly all the subjects for each Course are prescribed; there is no choice except as indicated. For the year 1905-6 they are given on the following pages:—

I. CIVIL ENGINEERING.

The instruction offered by the Department of Civil Engineering has been designed for the purpose of giving to the student that fundamental training in general and technical education which will best serve him in his subsequent professional career as a Civil Engineer.

The work of the student during the first years of his course is in the natural sciences, mathematics, foreign languages, etc., but the later years of the course are mainly devoted to professional branches which are of general usefulness to the Civil Engineer in whatever particular branch his practice may develop. It is felt to be the first essential that this training should be as broad, thorough and deep as is possible. While such studies are primarily technical and theoretical, each principle is illustrated by some standard method of practice; the purpose being to unite the principles of sound theory with those of good practice as far as is practicable in the technical college. This advantage may be greatly increased by the student taking a position in a Civil Engineer's office or in connection with some engineering work during his long vacations.

However, the range of Civil Engineering is so broad that no one can expect to become an expert in all its branches. This fact is recognized in the Department by providing a system of electives, in their senior year, which enables the students to select some of their studies, while obtaining the general technical training already described. For example, if a student desires to

fit himself particularly for that special branch of Civil Engineering termed Railway Engineering, advanced courses are offered in this line; if he prefers to become a Bridge Engineer, an advanced course in bridge design is offered; if he wishes to fit himself for the position of Sanitary Engineer (now of rapidly increasing importance in this country), he may choose the courses in water and sewage purification; if he chooses to become an Hydraulic Engineer, he may continue his course in hydraulics by the study of harbors, rivers, and canals; should he prefer to become a Geodetic Engineer, he may elect advanced work in astronomy; if he should desire to fit himself particularly for the duties of a Municipal Engineer, he would choose the course on streets, roads, and pavements in addition to those courses of required studies bearing also directly upon this line of practice; should his inclination be toward the life of the Irrigation Engineer, he would have the option of the course in irrigation engineering; if he wishes to fit himself to be a Consulting Architectural Engineer he would take the lectures on the design of the steel framework of buildings and on composite construction, etc. In short, while the general technical training of the Civil Engineering student is fundamental and essential, such opportunity for differentiation is offered as is practicable, to meet as far as is possible the demands for the Civil Engineer specializing in practice. It should also be said that as the student advances in his course a constantly increasing opportunity is given to develop his individual capacity, independence and resourcefulness (by more and more merging work done by the instructor for absorption by the student, into work by the student under the supervision and guidance of the professor), which finds its culmination in his graduation thesis; thus constituting a training that will make him more efficient than if he

should be graduated with his individual capabilities less developed.

It is further believed that the Civil Engineer cannot attain his full measure of usefulness if his college course has been too narrow and technical; hence each year of his course contains some studies that are, to a greater or less extent, broadening in their character. Partly with this in view, such studies are introduced (in the later years) as contracts and specifications, which give the student some acquaintance with the principles of jurisprudence; and economics, which give him an enlarged view of transportation, and of many industrial problems of the present day. Opportunity is thus offered the student to develop a knowledge and interest in those commercial and administrative affairs, with which his professional duties in after life are so often intimately associated.

COURSE OF STUDY IN CIVIL ENGINEERING.

FRESHMAN YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
English Composition .	3		English 1	50
Elementary German } one only	3		German 1	53
Elementary French } required				
Higher Algebra . . .	3		French 1	56
Plane Trigonometry .	2		Mathematics 1	64
General Chemistry . .	2	3	Mathematics 2a	64
Free-hand Drawing . .		6	Chemistry 1	67
Instrumental Drawing and Lettering . . .		3	Drawing 1	71
Wood-working . . .		3	Drawing 2	72
			Shop 1	72

SECOND TERM.

Forms of Prose . . .	3		English 2	50
Elementary German } one only	3		German 2	53
Elementary French } required				
Higher Algebra continued	1		French 2	56
Analytical Geometry .	3		Mathematics 2b	65
Elementary Physics . .	2	2	Mathematics 3	65
General Chemistry . .	2	3	Physics 1	66
Geometrical Drawing and Lettering		4	Chemistry 2	67
Pattern Work and Molding		3	Drawing 3	72
			Shop 2	72

SOPHOMORE YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
German con- tinued } one only French con- } required tinued	3		German 3	54
Differential Calculus ✓	3		French 3	56
Descriptive Geometry .	2	2	Mathematics 4	65
Heat and Optics . . .	3	3	Mathematics 7	65
Qualitative Analysis .	1	4	Physics 2 ✓	66
Mechanical Drawing and Lettering . . .		6	Chemistry 3	67
Forging and Machine Work		3	Drawing 4	72
			Shop 3	72

SECOND TERM.

Elementary Surveying .	2	6	Civ. Eng. 1	73
Integral Calculus . .	3		Mathematics 5	65
Descriptive Geometry and Stereotomy . .	2	2	Mathematics 8	65
Statics and Stress . .	3		Mechanics 1	65
Electricity and Magnet- ism	3	3	Physics 3	66
Machine Work . . .		4	Shop 4	72

VACATION WORK.

Civil Engineering students will take Civil Engineering 2 (page 73) during the latter part of the summer vacation.

JUNIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Higher Surveying . . .	3		Civ. Eng. 4	73
Topographical Drawing		9	Civ. Eng. 5	74
Engineering Materials .	3		Civ. Eng. 6	74
Testing Laboratory . .		6	Civ. Eng. 7	74
Electrical Machinery .	3		Elec. Eng. 1	79
Statics and Kinetics .	3		Mechanics 2	65
Electrical Measure- ments		3	Physics 4	66

SECOND TERM.

Framed Structures . . .	3		Civ. Eng. 8	74
Structural Drawing . .		9	Civ. Eng. 9	74
Hydraulics	3		Civ. Eng. 10	74
Steam Engine	3		Mech. Eng. 4	77
Deflection and Ellipse of Stress	3		Mechanics 3	66
Practical Astronomy .	3		Astronomy 2	65

Civil Engineering students will take Civil Engineering 3 (page 73) during the latter part of the summer vacation.

SENIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Framed Structures . .	3	9	Civ. Eng. 11	78
Structural Design . .			Civ. Eng. 12	78
Water and Sewerage Systems	3		Civ. Eng. 13	78
Kinematics, etc. . . .	3		Mechanics 4	66
Engineering Economics	3		Economics 9	60
*Elective (one to be chosen)	3			
(a) Railway Engineering			Civ. Eng. 14	78
(b) Roads, Streets and Pavements .			Civ. Eng. 15	78
(c) Irrigation Engineering			Civ. Eng. 16	78
(d) Geodesy			Astronomy 3	65
(e) Mathematical Theory of Electricity and Magnetism				
(f) Bacteriology . . .			Physics 6	67
(g) U. S. Constitution			Botany 3	69
			History 13	61

*Any elective may be omitted when the number of students presenting themselves for it is less than five.

SENIOR YEAR—Continued.

SECOND TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Masonry Structures . . .	3	9	Civ. Eng. 17	75
Contracts and Specifications	1		Civ. Eng. 18	75
Engineering Design			Civ. Eng. 24	76
Thesis			Civ. Eng. 25	76
Dynamics, etc.	3		Mechanics 5	66
*Elective (two to be chosen)	6			
(a) Water and Sewage Purification			Civ. Eng. 19	75
(b) Suspension, Cantilever, Arch and Lift Bridges			Civ. Eng. 20	76
(c) Steel Frame Buildings			Civ. Eng. 21	76
(d) Reinforced Concrete, etc.			Civ. Eng. 22	76
(e) Harbors, Rivers and Canals			Civ. Eng. 23	76
(f) Hydraulic Motors and Locomotive Engineering			Mech. Eng. 20 and 21	79
(g) Transportation, etc.			Economics 10	60
(h) Geology			Geology 1	71

*Any elective may be omitted when the number of students presenting themselves for it is less than five.

EQUIPMENT IN CIVIL ENGINEERING.

General Equipment.—During the Freshman and Sophomore years students have the advantages of the libraries and other apparatus of the several departments in which their courses are given. For the shop-work the students make use of the excellent equipment of the Manual Training School.

Library, Models, and Drawings.—Besides the University Library for general reference, there is a well-selected department library accessible to students which they consult freely on assigned topics. There is also a large assortment of drawings of the most interesting engineering and architectural structures at home and abroad. Many photographs and blue-prints have been collected, illustrating all the more common styles of bridges with their details. The civil engineering museum contains a considerable collection of models and views of important public works of this and foreign countries, extensive exhibits illustrating the manufacture and properties of engineering materials, etc.

Surveying Instruments.—The equipment includes four transits for ordinary field work, one altazimuth instrument for triangulation and astronomical work reading to ten seconds of arc on both horizontal and vertical circles, three engineers' levels, two needle compasses, one sextant, one plane table, one precise level and rods, and all the necessary accompanying apparatus for field and office work, such as stadia rods, level rods, stadia slide rules, chains, tapes, signals, protractors, parallel rules, etc. There is also a complete mining transit, adapted to the use of the stadia, which may be used for topographical work if required.

The Testing Laboratory.—The facilities in the testing laboratory are very complete. In the laboratory of engineering materials, a floor space of about 2,500 square

feet is occupied by the following appliances: Two Riehle universal testing machines with a capacity of 100,000 lbs. and 20,000 lbs. respectively, both having extension columns to accommodate long test specimens; a new Riehle automatic and autographic testing machine of 200,000 lbs. capacity; a beam-testing machine, with a capacity of 100,000 lbs. on a length of 24 feet; two beam-testing machines with a capacity of 6,000 lbs. on a length of 5 feet, with micrometer deflection measuring apparatus; a column-testing machine with capacity of 1,000,000 lbs. on a length of 36 feet or less; a 60,000 inch-pound torsion machine; an abrasion machine; one ten-horse-power motor; a hydraulic pump; extensometers reading to ten-thousandths of an inch, and extensometers measuring strains with less precision; and all the gauges, scales and other extensive apparatus necessary for thorough equipment. In the cement laboratory there are machines of the Fairbanks, the Riehle, and the Olsen types; a Riehle screw press and a Boehme hammer, for standardizing the making of briquettes; boiling and steaming apparatus for acceleration tests; a Le Chatelier specific gravity apparatus; a temperature apparatus; a volumometer; a Riehle-Vicat apparatus; a large assortment of briquette molds; concrete molds, sieves, stamps and other appliances necessary to complete the working equipment.

II. THE COURSE IN MECHANICAL ENGINEERING.

The object of the course in Mechanical Engineering is to prepare the student to investigate and solve the problems which may present themselves in his chosen profession.

For the first two years the work of the student is the same in all of the engineering departments. These two years include, besides the more general subjects, the mathematics, physics, mechanics, and various forms of shop-work, necessary for a clear understanding of the special work of the department.

During the third and fourth years the work is largely of a technical character. It is, however, intended to keep the courses sufficiently broad to enable the graduate to enter any desired field of mechanical engineering.

The recitation work of a strictly professional nature begins in the third year with a study of mechanism, the construction of gear teeth, cams, etc. At the same time the student takes machine design, studying the design and proportions of various machines used in manufacturing.

In connection with these courses he also considers the strength of materials which are used for construction. The study of the steam engine is also begun in the third year.

In the fourth year the steam engine and boiler are both considered, together with methods of design and construction.

Courses are also given in thermo-dynamics, heating and ventilating, factory systems, hydraulic motors, and locomotive engineering.

The afternoon hours throughout the last two years are devoted largely to drawing, to accompany the courses in design, and to experimental work in the laboratory. This latter work includes engine, boiler, and pump testing, together with many other forms of experimental work and investigation.

**COURSE OF STUDY IN MECHANICAL ENGINEERING.
FRESHMAN YEAR.**

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation	Laboratory or Drawing.		
English Composition .	3		English 1	50
Elementary German } one only	3		German 1	53
Elementary French } required			French 1	56
Higher Algebra . .	3		Mathematics 1	64
Plane Trigonometry .	2		Mathematics 2a	64
General Chemistry . .	2	3	Chemistry 1	67
Free-hand Drawing .		6	Drawing 1	71
Instrumental Drawing and Lettering . . .		3	Drawing 2	72
Wood-working . . .		3	Shop 1	73

SECOND TERM.

Forms of Prose . . .	3		English 2	50
Elementary German } one only	3		German 2	53
Elementary French } required			French 2	56
Higher Algebra continued	1		Mathematics 2b	65
Analytical Geometry .	3		Mathematics 3	65
Elementary Physics .	2	2	Physics 1	66
General Chemistry . .	2	3	Chemistry 2	67
Geometrical Drawing and Lettering . . .		4	Drawing 3	72
Pattern Work and Molding		3	Shop 2	72

SOPHOMORE YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
German con- tinued	3		German 3	54
French con- tinued			French 3	56
Differential Calculus .	3		Mathematics 4	65
Descriptive Geometry .	2	2	Mathematics 7	65
Heat and Optics . . .	3	3	Physics 2	66
Qualitative Analysis .	1	4	Chemistry 3	67
Mechanical Drawing and Lettering . . .		6	Drawing 4	72
Forging and Machine Work		3	Shop 3	72

SECOND TERM.

Elementary Surveying	2	6	Civ. Eng. 1	73
Integral Calculus . .	3		Mathematics 5	65
Descriptive Geometry and Stereotomy . .	2	2	Mathematics 8	65
Statics and Stress . .	3		Mechanics 1	64
Electricity and Magnet- ism	3	3	Physics 3	66
Machine Work* . . .		4	Shop 4	72

VACATION WORK.

*In addition to the shop work named above, students in Mechanical Engineering will take six days of six hours each in shop work during Commencement week and the week following.

JUNIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Mechanism	3		Mech. Eng. 1	76
Machine Design	3		Mech. Eng. 2	76
Drawing		3	Mech. Eng. 5	77
Laboratory and Excursions		3	Mech. Eng. 7	77
Electrical Machinery . .	3		Elec. Eng. 1	79
Engineering Materials . .	3		Civ. Eng. 6	74
Testing Materials . . .		3	Civ. Eng. 7a	74
Torsion and Statics . . .	3		Mechanics 2	65
Electrical Measurements		6	Physics 4-5	66

SECOND TERM.

Machine Design	3		Mech. Eng. 3	77
Steam Engine	3		Mech. Eng. 4	77
Drawing and Design . .		6	Mech. Eng. 6	77
Laboratory and Excursions		6	Mech. Eng. 8	77
Electrical Machinery . .	3		Elec. Eng. 2	79
Electrical Laboratory . .		3	Elec. Eng. 3a	80
Deflection and Ellipse of Stress	3		Mechanics 3	66
Hydraulics	3		Civ. Eng. 10	74

SENIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Thermo-dynamics . . .	3		Mech. Eng. 9	77
*Steam Engine Designs	3		Mech. Eng. 10	78
**Steam Boilers . . .	3		Mech. Eng. 11	78
Drawing		9	Mech. Eng. 15	78
Laboratory and Excursions		6	Mech. Eng. 17	78
Economics for Engineers	3		Economics 9	60
Kinematics	3		Mechanics 4	66
Elective (one to be chosen)	3			
(a) Electrical Transmission			Elec. Eng. 10	80
(b) Mathematical Theory of Electricity and Magnetism			Physics 6	66

*First half term only. **Second half term only.

SENIOR YEAR—Continued.

SECOND TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
*Boiler and Chimney Design	3		Mech. Eng. 12	78
*Heating and Ventilating	3		Mech. Eng. 13	78
**Factory Systems	3		Mech. Eng. 14	78
Drawing		3	Mech. Eng. 16	78
Laboratory and Excursions		3	Mech. Eng. 18	79
*Hydraulic Motors	2		Mech. Eng. 20	79
**Locomotive Engineering	3		Mech. Eng. 21	79
Thesis		9	Mech. Eng. 19	79
Dynamics	3		Mechanics 5	66
**Projects	2		Elec. Eng. 12	80
Contracts	1		Civ. Eng. 18	79
Elective (one to be chosen)	3			
(a) Economics for Engineers			Economics 10	60
(b) Composite Construction			Civ. Eng. 22	76
(c) Industrial and Engineering Chemistry			Chemistry 15-16	68

*First half term only. **Second half term only.

EQUIPMENT IN MECHANICAL ENGINEERING.

Library and Drawings.—Students have access to a modern and carefully selected technical library and to a number of the best technical journals which are kept bound and up to date. In addition to the library the department has also a number of drawings and blue-prints illustrating modern methods of designing and constructing engines, boilers and machines of different kinds. Special attention has been given in the selection of the drawings to those which refer to steam engineering, engine and boiler work, and heating and ventilating. Among these are a number of working drawings of the machinery of ships for the United States Navy. Photographs, cuts and catalogues are kept on hand for reference.

For a generous supply of photographs, suitably framed and labeled, the department is indebted to the following firms:—

Allis-Chalmers Company.
Alphons Custodis Construction Company.
American Locomotive Company.
Bethlehem Steel Company.
Blake Manufacturing Company.
Dean Steam Pump Company.
Ferracute Manufacturing Company.
General Electric Company.
Goulds Manufacturing Company.
Hooven, Owens, Rentschler Company.
Knowles Steam Pump Works.
Laidlaw-Dunn-Gordon Company.
Leschen & Sons Rope Company.
Lidgerwood Manufacturing Company.
Niles-Bement-Pond Company.
Rand Drill Company.
Rogers Locomotive Works.

Weber Gas Engine Company.
Westinghouse Machine Company.
Williams Tool Company.
Worthington, Henry R.

Laboratory.—The following equipment has been transferred from the Twenty-seventh street site to the new engineering laboratory: A small vertical engine, a 6x12 slide valve engine, a 5½x10 Buckeye engine, a 6 and 11x10 Ideal cross-compound automatic engine, equipped with an Alden dynamometer and Worthington condenser and pump, simple and duplex steam pumps, apparatus for testing lubricants, and the supply of indicators, calorimeters, tanks, gauges, meters, and other incidental equipment.

In addition to the above the following have been purchased for the new laboratory: 8, 12, 7x12 Fairbanks-Morse compound duplex pump, a 15 H. P. Otto gasoline engine, a 16 H. P. Weber gas engine and suction gas producer, a 10 H. P. Webber dynamometer, a 10 H. P. Flather hydraulic dynamometer, a Golden oil and bearing testing dynamometer, a Wheeler condenser and pump, an Alden dynamometer of 125 H. P. capacity, and small apparatus and instruments necessary to make the contemplated experimental work of the laboratory complete.

The Wheeler condenser and 125 H. P. Alden dynamometer, mentioned above, are to be used in connection with a new 10 and 18x30 tandem compound Corliss engine, generously donated by the Fulton Iron Works Company of St. Louis.

Acknowledgment is also made of the donation of a working model of a Cameron steam pump by the Cameron Steam Pump Company of New York, a Rochester automatic lubricator by Green, Tweede & Co. of New York, and a sample board of ropes by A. Leschen & Sons Rope Company.

Much of the experimental work of the department, particularly in the line of boiler testing, care and operation of boilers and engines, and investigations in heating and ventilating, will be carried on in connection with the central heating and lighting plant of the University.

Shop.—As has been the custom for many years, the instruction in wood work, pattern making, moulding, forge and machine work will for the present be carried on at the shops of the St. Louis Manual Training School. For convenience in the manufacture of special apparatus, and for repairs in the engineering laboratories, a small shop has been installed in the east end of the laboratory building. The equipment of the iron working shop consists of the following: A Prentice engine lathe, a Pratt & Whitney tool makers' lathe, a small planer, a Slate sensitive drill, a Cincinnati universal milling machine, upright and bench grinders, and an equipment of small tools. The wood working shop contains a Hall & Brown jointer, a Hall & Brown band saw, an Oliver universal saw bench, and the corresponding small tool outfit.

The department is indebted to the Norton Emery Wheel Company of Worcester, Mass., for the donation of the upright and bench grinders, and to the White Power and Speed Regulator Manufacturing Company, Ltd., of Kalamazoo, Mich., for one of their White speed regulators.

III. COURSE IN ELECTRICAL ENGINEERING.

The Course in Electrical Engineering is designed to fit the student to deal with the problems that arise in the practice of his profession, involving the application of electricity in the arts. It is characterized chiefly by the attention paid to mathematics and the mathematical sciences, such as physics and the theory of electricity. The controlling idea is to give the student a thorough training in the basic principles of the subject and to

develop the spirit of investigation, rather than to acquaint him with an elaborate mass of facts and figures, in the belief that the course is too short for any purpose not directly conducing to the acquirement of a sound theoretical knowledge; all reliable authorities are agreed that the latter is the best foundation upon which to build the subsequently acquired superstructure of practical information.

All branches of engineering are based primarily upon mathematics, physics, chemistry, and mechanics, and these subjects are, therefore, thoroughly treated in preparation for the work of this Department. The study of electricity is not begun until the middle of the second year of the course; at that time the elementary phenomena are explained, and from then on the subject is developed by an extended course of lectures, recitations, and laboratory experiments. From the middle of the third year until the end of the fourth, the work in the electrical laboratory involves the experimental study of the properties of electrical apparatus and appliances, and, therefore, incidentally the practical management and testing of modern types of direct and alternating current machinery and instruments.

An important part of the work of the senior year is the preparation of a thesis dealing with some phase of the work which the student has been pursuing, and whose thoroughness is taken as a measure of the fitness of the candidate for the degree.

The location of the University in a manufacturing district affords exceptional opportunities to students for the observation and study of modern engineering installations. Inspection trips to many places of interest, made possible by the courtesy of owners and officers of industrial works, form a regular part of the course of instruction. They are made under the supervision of an instructor.

**COURSE OF STUDY IN ELECTRICAL
ENGINEERING.
FRESHMAN YEAR.**

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
English Composition .	3		English 1	50
Elementary German } one only				
Elementary French } required	3		German 1	53
Higher Algebra . . .	3		French 1	56
Plane Trigonometry . .	2		Mathematics 1	64
General Chemistry . .	2	3	Mathematics 2a	64
Freehand Drawing . .		6	Chemistry 1	67
Instrumental Drawing and Lettering . . .		3	Drawing 1	71
Wood-working . . .		3	Drawing 2	72
			Shop 1	72

SECOND TERM.

Forms of Prose . . .	3		English 2	50
Elementary German } one only				
Elementary French } required	3		German 2	53
Higher Algebra continued	1		French 2	56
Analytical Geometry . .	3		Mathematics 2b	65
Elementary Physics . .	2	2	Mathematics 3	65
General Chemistry . .	2	3	Physics 1	66
Geometrical Drawing and Lettering . . .		4	Chemistry 2	67
Pattern Work and Molding		3	Drawing 3	72
			Shop 2	72

SOPHOMORE YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
German continued	3		German 3	54
French continued			French 3	56
Differential Calculus .	3		Mathematics 4	65
Descriptive Geometry .	2	2	Mathematics 7	65
Heat and Optics . . .	3	3	Physics 2	66
Qualitative Analysis .	1	4	Chemistry 3	67
Mechanical Drawing and Lettering . . .		6	Drawing 4	72
Forging		3	Shop 3	72

SECOND TERM.

Elementary Surveying	2	6	Civil Eng. 1	73
Integral Calculus . . .	3		Mathematics 5	65
Descriptive Geometry and Stereotomy . .	2	2	Mathematics 8	65
Statics and Stress . . .	3		Mechanics 1	65
Electricity and Magnetism	3	3	Physics 3	66
Machine Work*		4	Shop 4	72

VACATION WORK.

*In addition to the shop work named above, students in Electrical Engineering will take six days of six hours each in shop-work during Commencement week and the week following.

JUNIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Electrical Machinery .	3		Elec. Eng. 1	79
Mechanism	3		Mech. Eng. 1	76
Machine Design	3		Mech. Eng. 2	76
Mechanical Drawing .		3	Mech. Eng. 5	77
Mechanical Laboratory		3	Mech. Eng. 7	77
Engineering Materials .	3		Civ. Eng. 6	74
Torsion and Statics . .	3		Mechanics 2	65
Electrical Measure- ments		6	Physics 4, 5	66
Testing Laboratory . .		3	Civ. Eng. 7a	74

SECOND TERM.

Electrical Machinery .	3		Elec. Eng. 2	79
Electrical Laboratory .		6	Elec. Eng. 3	79
Machine Design	3		Mech. Eng. 3	77
Steam Engine	3		Mech. Eng. 4	77
Mechanical Drawing .		6	Mech. Eng. 6	77
Mechanical Laboratory		3	Mech. Eng. 8a	77
Hydraulics	3		Civ. Eng. 10	74
Deflections and Ellipse of Stress	3		Mechanics 3	66

SENIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Electrical Machinery .	3		Elec. Eng. 4	80
Electrical Design, Drawing		6	Elec. Eng. 6	80
Electrical Laboratory .		9	Elec. Eng. 8	80
Electric Lighting and Transmission of Power	3		Elec. Eng. 10	80
Mathematical Theory of Electricity and Magnetism	3		Physics 6	66
Kinematics	3		Mechanics 4	66
Economics of Engineering	3		Economics 9	60

SECOND TERM.

Electrical Machinery .	3		Elec. Eng. 5	80
Electrical Design, Drawing		3	Elec. Eng. 7	80
Electrical Laboratory .		6	Elec. Eng. 9	80
*Electric Lighting and Transmission of Power	3		Elec. Eng. 14	81
†Electric Railways . .	3		Elec. Eng. 11	80
†Engineering Projects .	2		Elec. Eng. 12	80
Contracts and Specifications	1		Civ. Eng. 18	75
*Hydraulic Motors . .	2		Mech. Eng. 20	79
Dynamics	3		Mechanics 5	66
Economics of Engineering	3		Economics 10	60
Thesis			Elec. Eng. 13	80

*First half of term only. †Second half of term only.

APPLIANCES IN ELECTRICAL ENGINEERING.

The electrical laboratory is now permanently located in the Cupples' Engineering Laboratory, and occupies a floor space of, approximately, 2,400 square feet. The various machines that make up the equipment are mounted on a series of parallel platforms, raised about 15 inches above the floor level, and substantially built of heavy timber bolted to concrete foundations. In this way the machines may be grouped in pairs in a variety of ways, thus allowing great flexibility of arrangement.

The laboratory is supplied with electrical power for operating the experimental generators and motors, from the central power plant of the University, the current thus received being two-phased at 60 cycles and 600 volts. Direct current at 125 volts is supplied by a motor-generator set consisting of a 50 H. P. induction motor and a 30 kw. D. C. generator.

The machines for strictly experimental work include a considerable variety of types, as follows: One 15 kw., 125-volt compound generator; one 12½ kw., 125-volt compound generator; one 5 H. P., 500-volt series motor; one 6 kw. 250-volt balancer set; one 2 H. P., 125-volt shunt motor; one 1 kw., 125-volt compound generator; two 1.85 H. P. automobile motors; one 15 kw., two, three and six-phase revolving field alternator; one 10 kw., one, two and three-phase rotary converter; one 5 H. P. three-phase induction motor; one 5 H. P. single-phase induction motor; two 2½ kw., air-cooled transformers; two 10 kw., oil-cooled transformers, designed for two to three-phase transformation; several smaller machines built by students for thesis work; and the necessary complement of rheostats, dynamometers and other accessories.

For ordinary measurements there are thirty-five instruments of several types, including ammeters, volt-

meters and wattmeters of various ranges. In addition there is an excellent set of standards for calibration and precise measurements, including the following instruments: A potentiometer with a range from 0.0001 to 150 volts; a Weston semi-portable laboratory standard voltmeter; a corresponding millivoltmeter provided with a shunt box for current measurements; two Weston combination A. C. and D. C. wattmeters, with multipliers; one Weston combination A. C. and D. C. voltmeter, with multiplier; an accurate Wheatstone bridge; two Reichsanstalt resistance standards of 1.0 and 0.1 ohms, respectively; three current-carrying resistance standards of 0.1 ohm, 0.001 ohm, and 0.0001 ohm resistance, respectively, the latter having a capacity of 1000 amperes; two Siemens' dynamometers of different ranges; and one electrostatic voltmeter of the Kelvin multicellular type. It is intended to add other standards and instruments from time to time, but in the meantime a number of standards belonging to the Department of Physics are available for certain special kinds of work.

Lecture and designing-room work are greatly facilitated by the possession of a considerable amount of material donated by exhibitors at the Louisiana Purchase Exposition. There is an interesting collection of high-potential Locke insulators; a complete multiplex lightning-arrester installation for a 15,000-volt line; several types of arc lamps; a street railway controller; samples of transformer coils, armature windings, core punchings and storage battery parts; and a considerable number of photographs and drawings of electrical installations and apparatus.

The department library contains nearly all of the standard texts and complete files of many of the best electrical journals of this and foreign countries. Catalogues and bulletins of all the large manufacturing

companies are kept up to date. Additions to the library are constantly being made, and the back numbers of those files at present incomplete are being added as rapidly as they can be obtained.

IV. CHEMISTRY AND CHEMICAL ENGINEERING.

A graded course of instruction extending through four years is offered to students in Chemistry and Chemical Engineering. The instruction in Chemistry is given by means of lectures and laboratory work and each student is assigned a desk for his sole use, and is allowed to supplement the regular work of his course by additional practice, so far as he may desire.

In the first year the work consists of lectures and laboratory exercises upon General Chemistry. The lectures are illustrated with lecture table experiments, and they deal with the facts of descriptive chemistry, and with the fundamental laws and principles of the science. The laboratory work goes hand in hand with the lectures, and in it the students prepare all of the more important elements and compounds, and study their properties and transformations. The students are taught to use the accurate balances and measuring apparatus and by means of these verify the laws of chemical combination.

In this course the outlines of qualitative analysis and theoretical chemistry are taught, and the student is given practice in the solution of chemical problems.

The second year's work in Chemistry is devoted to Analytical Chemistry. This deals with qualitative and quantitative analysis. The work is chiefly laboratory work and embraces the systematic study of the methods of detection, separation, and estimation of elements and

compounds. The laboratory work of the student is outlined in the lecture room and is supplemented by personal instruction at the student's desk.

In the third year the lectures are upon Organic Chemistry. In these lectures the methods of preparation and transformation of typical carbon compounds are considered. The relationships between classes of compounds are explained, and the reasoning employed in arriving at constitutional or structural formulas is discussed.

In the laboratory work the students make and study the more important compounds. They are taught methods of manipulation, and they acquire practice in determining the composition and molecular formula of organic compounds.

Instruction is also given in advanced Quantitative Analysis. After having become familiar with the principles of gravimetric and volumetric analysis, the students make analyses of industrial materials and products, and are given instruction in the sanitary examination of water, food, milk and food products. Courses in Mineralogy are also open to third year students. These courses are devoted to lectures and laboratory work in crystallography, blowpipe analysis, and the determination of minerals by means of blowpipe analysis.

In the fourth year industrial chemistry is taught by lectures and recitations. The students attend the chemical seminary, in which recent books and publications are reviewed and discussed, and problems for research are outlined. The laboratory work of the third year is continued, research work is begun, and a thesis prepared.

On page 108 is a general statement in regard to branches which are common to all technical courses.

COURSES OF STUDY IN CHEMICAL
ENGINEERING.

FRESHMAN YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
English Composition . . .	3		English 1	49
Elementary German } one only required	3		German 1	53
Elementary French }			French 1	56
Higher Algebra	3		Mathematics 1	64
Plane Trigonometry . .	2		Mathematics 2a	64
General Chemistry . . .	2	2	Chemistry 1	67
Freehand Drawing . . .		6	Drawing 1	71
Instrumental Drawing and Lettering		3	Drawing 2	72
Wood-working		3	Shop 1	72

SECOND TERM.

Forms of Prose	3		English 2	50
Elementary German } one only required	3		German 2	53
Elementary French }			French 2	56
Higher Algebra continued	1		Mathematics 2b	65
Analytical Geometry . .	3		Mathematics 3	65
Elementary Physics . . .	2	2	Physics 1	66
General Chemistry . . .	2	2	Chemistry 2	67
Geometrical Drawing and Lettering		4	Drawing 3	72
Pattern Work and Molding		5	Shop 2	73

SOPHOMORE YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lectures.	Laboratory.		
German continued } one only required	3		German 3	54
French continued			French 3	56
Differential Calculus .	3		Mathematics 4	65
Descriptive Geometry .	2	2	Mathematics 7	65
Heat and Optics . . .	3	3	Physics 2	66
Qualitative Analysis .	1	4	Chemistry 3	67
Mechanical Drawing and Lettering . . .		6	Drawing 4	72
Forging and Machine Work		3	Shop 3	72

SECOND TERM.

Quantitative Analysis .	1	3	Chemistry 4	67
Elementary Surveying .	2	6	Civil Eng. 1	73
Integral Calculus . .	3		Mathematics 5	65
Descriptive Geometry and Stereotomy . .	2	2	Mathematics 8	65
Statics and Stress . .	3		Mechanics 1	65
Electricity and Magnetism	3	3	Physics 3	66

JUNIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lectures.	Laboratory.		
Organic Chemistry . . .	3		Chemistry 5	67
" " (Lab-oratory)		6	Chemistry 7	67
Mineralogy and Blow-pipe Analysis . . .	3	2	Chemistry 13	68
Machine Designing . .	3		Mech. Eng. 2	77
Electrical Machinery .	3		Elec. Eng. 1	79
Torsion and Statics . .	3		Mechanics 2	65

SECOND TERM.

Organic Chemistry . . .			Chemistry 6	67
" " (Lab-oratory)	3	6	Chemistry 8	67
Descriptive Mineralogy	2	2	Chemistry 14	68
Electrical Machinery .	3		Elec. Eng. 2	79
Steam Engine	3		Mech. Eng. 4	77
Deflection and Ellipse of Stress	3		Mechanics 3	66
Electrical Laboratory .		3	Elec. Eng. 3	79

SENIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lectures.	Laboratory.		
Quantitative Analysis		6	Chemistry 9	67
(advanced course)		1	Chemistry 11	67
Physical Chemistry	2		Chemistry 15	68
Industrial Chemistry				
Chemical Research		12	Chemistry 17	68
Work			Civil Eng. 6	74
Engineering Materials	3		Economics 9	60
Economics	3		Mechanics 4	66
Kinematics	3	6	Botany 8	69
Bacteriology				

SECOND TERM.

Advanced Quantitative		6	Chemistry 10	67
Analysis	1		Chemistry 12	68
Chemical Seminary	2		Chemistry 16	68
Industrial Chemistry				
Chemical Research		15	Chemistry 18	68
Work			Mechanics 5	66
Dynamics	3			
Contracts and Specifica-	1		Civil Eng. 18	75
tions	3		Geology 1	71
Geology	3		Civil Eng. 10	74
Hydraulics	3		Economics 10	60
Economics (Elective)				

V. ARCHITECTURE.

GENERAL OUTLINE OF INSTRUCTION.

This course is arranged to give to its graduates the artistic and technical foundation and breadth of culture necessary for the professional practice of architecture. It consists, broadly, in training the student's powers of artistic conception and his facility of artistic expression, and in giving him a knowledge of the principles of architectural composition, of the materials and processes of construction, and of methods employed in the organization and execution of architectural works.

The first year is given to preparatory training, consisting, in addition to English composition, English prose and modern languages, of mathematics, physics, chemistry, as a basis for the constructive branches, and of instrumental and freehand drawing, in preparation for the delineation of architectural subjects.

In the second year the preparatory studies are continued and the study of architectural forms and principles begun. The broad, unchangeable principles of architecture are illustrated by the monuments of past ages. These monuments are examined and analyzed, their relation to the surrounding civilization discussed, and the architecture of different periods compared and contrasted. Study is also made of motives and details of architecture. Their rational functions are discussed in lectures and practice in their application given by problems in original design.

The study of design occupies a large part of the time of the third and fourth years and may be considered the central study of the course in architecture. To stimulate interest, the work in design is made competitive.

It is carried on through a series of problems of increasing difficulty. For each problem a program is issued, setting forth the specific requirements of a special building. A month or more is consumed by the student in making studies of his chosen scheme. These are concluded by carefully finished drawings showing the results of his study. Constant and systematic criticism and advice is given from the inception to the finished drawings.

The more advanced problems in design, though primarily intended to illustrate principles of composition, are each made to include the study of the requirements of some special class of modern buildings.

Practice in freehand drawing, water-color drawing and modeling in clay is continued from the beginning to the end of the course.

Every exercise throughout the course is utilized to drill the student in rapid and tasteful draughtsmanship.

Structural studies are begun in the second year with the study of structural statics and stress, and continued in the third year with building materials, wood and masonry construction, systems of fire-proofing, roof-trusses, plumbing, electric wiring, heating and ventilation.

In this year also the business side of the practice of architecture is treated in lectures on contracts, specifications and the conduct of works.

In the second term of the fourth year the student is occupied in the preparation of an extended thesis, the purpose of which is to demonstrate that he has received full benefit of the course of instruction given to him. The thesis is required to consist of an original design for some special building—the subject being formulated by the student, accompanied by a technical description of the construction and materials employed.

V. ARCHITECTURE.

FRESHMAN YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
English Composition .	3		English 1	50
Elementary French } one only required	3		French 1	56
Elementary German }			German 1	53
Higher Algebra	3		Math. 1	64
Plane Trigonometry .	2		Math. 2a	64
General Chemistry . .	2	2	Chem. 1	67
Freehand Drawing . .		6	Draw. 1	71
Instrumental Drawing .		3	Draw. 2	72
Shop Work		3	Shop 1	72

SECOND TERM.

Forms of English Prose	3		English 2	50
Elementary French } one only required	3		French 2	56
Elementary German }			German 2	53
Higher Algebra continued	1		Math. 2b	65
Analytical Geometry .	3		Math. 3	65
Elementary Physics . .	2	2	Physics 1	66
General Chemistry . .	2	3	Chem. 2	67
Geometrical Drawing .		4	Draw. 3	72
Shop Work		3	Shop 2	72

SOPHOMORE YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Elements of Architecture	1		Arch. 5a	82
Elementary Design		15	Arch. 2a	81
Ancient Architecture	1	3	Arch. 1a	81
Freehand Drawing		4	Arch. 3a	82
Differential Calculus	3		Math. 4	65
Descriptive Geometry	2	3	Math. 7	65
Heat and Optics	2	2	Phys. 2	66

SECOND TERM.

Elements of Architecture	1		Arch. 5b	82
Design		8	Arch. 2b	81
Renaissance Architecture	1	3	Arch. 1b	81
Freehand Drawing		4	Arch. 3b	82
Shades and Shadows and Stereotomy		3	Arch. 6a	82
Integral Calculus	3		Math. 5	65
Statics and Stress	3		Mech. 1	65
Electricity and Magnetism	3	3	Phys. 3	66
Summer Work			Arch. 12	83

JUNIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Drawing.		
Theory of Design . .	1		Arch. 5c	82
Design		12	Arch. 2c	81
Freehand Drawing . .		4	Arch. 3c	82
Water Color		3	Arch. 7a	83
Perspective		3	Arch. 6b	83
Medieval Architecture .	1	3	Arch. 1c	81
Building Construction .	1	3	Arch. 4a	82
French	3		French 7	56
Deflections and Graphic Statics	3		Mech. 2	65
*Material of Construction	3		Civ. Eng. 6	74

*First six weeks.

SECOND TERM.

Theory of Design . .	1		Arch. 5d	82
Design		18	Arch. 2d	82
Freehand Drawing . .		4	Arch. 3d	82
Water Color		3	Arch. 7b	83
Building Construction .	1	3	Arch. 4b	82
French	3		French 8	56
*Heating and Ventilation	3		Mech. Eng. 13	78
†Framed Structures . .	3		Civ. Eng. 8	74
‡Building Sanitation . .	1		Arch. 8	83
Summer Work			Arch. 12b	83

*First half term. †First half term. ‡Second half term.

SENIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Design		30	Arch. 2e	82
Life Class		4	Arch. 3e	82
Modeling		3	Arch. 9a	83
Contemporary Architecture	1		Arch. 1d	81
History of Painting	1		Hist. Art 3	62
Specifications and Contracts	1		Arch. 10a	83
*Structural Details	3		Civ. Eng. 11	74

*First six weeks of term.

SECOND TERM.

Thesis		30	Arch. 11	83
Life Class		4	Arch. 3f	82
Modeling		3	Arch. 9b	83
Practice of Architecture	1		Arch. 10b	83
Economics	3		Econ. 10	60
History of Sculpture	2		Hist. Art 4	62

EQUIPMENT.

The equipment thus far collected consists of a small, though carefully selected, working library, composed of standard works on architecture, also of periodicals, lantern slides and other illustrative material. For use in freehand drawing there is a collection of casts, mainly of architectural ornament of the best periods; for water-color work a set of antique Persian tiles, several pieces of Chinese glazed terra cotta, Japanese pottery and other objects of especial interest in color and texture.

The Department occupies spacious quarters, consisting of the entire first floor of Cupples' Hall No. 1. The ample rooms are admirably lighted for both day and evening work.

SPECIAL STUDENTS IN ARCHITECTURE.

Graduates of colleges are admitted as special students or to advanced standing, and if candidates for degrees, are able to complete the course in from two to three years. Students from other schools and colleges are admitted by certificate.

Draftsmen of two or more years' experience in an architect's office are admitted as special students, and are permitted to take such subjects as their proficiency and preparation may warrant.

The fee for special students is \$50 per term, which entitles them to the use of the draughting room and to draughting room instruction, and, in addition, to four lecture hours per week. An additional fee of \$5 is required for each additional lecture hour, the total fee for the term not to exceed \$75.

EVENING CLASS IN DESIGN.

For the past three years evening instruction in design has been offered to draughtsmen of two or more years of experience.

The class is organized as far as possible along the lines of the French "*ateliers*," similar to like organizations in a number of the Eastern cities of this country. The students of the "*atelier*" enter into the competitions of the Society of Beaux Arts Architects. In each competition the designs are sent to New York to be exhibited and to compete for honors in conjunction with designs sent by students from other cities. The success of designs sent by students of Washington University has been noteworthy and has aroused a marked degree of enthusiasm among those participating.

Criticism is given on two evenings of the week, one each by Prof. Mann and Mr. Spiering.

The fee of the "*atelier*" is \$4 per month.

PRIZES.

A friend of the University has offered two prizes, one of \$100 and one of \$50, to the students of the Department of Architecture. These prizes are to be awarded in competition, the subject stipulated being "Houses for Workingmen." The programme will be formulated and issued in the Fall of 1905.

VI. ARCHITECTURAL ENGINEERING.

GENERAL OUTLINE OF INSTRUCTION.

To meet the growing demand for specialization in construction in the practice of architecture, the University offers in addition to the general course in Architecture a course in Architectural Engineering. This course is arranged to give all the studies in construction given in the general course in Architecture and to add to them extended courses in materials, masonry structures and foundations, framed structures, structural design, steel buildings and composite construction.

The aim is to give the student proficiency in construction and, at the same time, to train him to consider buildings not structurally alone, but architecturally as well. Sufficient artistic training is given for the student to acquire standards for judgment of architectural merit and to enable him to clearly recognize the relation of construction and architecture.

The special courses in construction are given parallel with the civil engineering courses named in the schedule below. The description of studies as given under Civil Engineering applies except that the instruction given is made to pertain to architectural structures rather than to those of general engineering.

ARCHITECTURAL ENGINEERING.

The studies of the Freshman and Sophomore Years are the same as given in the schedule under "Architecture."

JUNIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Laboratory or Drawing.		
Deflections and Graphic Statics	3		Mech. 2	65
Design		12	Arch. 2c	81
Medieval Architecture	1	3	Arch. 1c	81
Building Construction	1	6	Arch. 4a	82
Perspective	1		Arch. 6a	82
Theory of Design	1		Arch. 5c	82
Materials of Construction	3		Civ. Eng. 6	74
Testing Laboratory		3	Civ. Eng. 7	74

SECOND TERM.

*Heating and Ventilation	3		Mech. Eng. 13	78
Stresses in Framed Structures	3		Civ. Eng. 8	74
Structural Drawing		9	Civ. Eng. 9	74
Design		12	Arch. 2d	82
Freehand Drawing		4	Arch. 3d	82
Water Color		2	Arch. 7a	83
†Building Sanitation	1		Arch. 8	83
Building Construction	1	6	Arch. 4b	82
Theory of Design	1		Arch. 5d	82
Summer Work			Arch. 12b	83

*First half term. †Second half term.

SENIOR YEAR.

FIRST TERM.

Subjects.	Hours per week.		Course.	For description see page
	Lecture or Recitation.	Drawing.		
Framed Structures . . .	3		Civ. Eng. 11	74
Structural Design . . .		15	Civ. Eng. 12	74
Superintendence . . .	1	9	Arch. 4c	82
Contracts and Specifications	1		Arch. 10a	83
Contemporary Architecture	1		Arch. 1d	81
Economics	3		Econ. 9	60

SECOND TERM.

Steel Framework of Buildings and Composite Construction . .	3		Civ. Eng. 21 and 22	76
Masonry Structures . .	3		Civ. Eng. 19	75
Practice of Architecture	1		Arch. 10b	83
Thesis		24	Arch. 11	83
Economics	3		Econ. 10	60

VII. SCIENCE AND LITERATURE.

FRESHMAN AND SOPHOMORE YEARS.

(See pages 112 and 113.)

JUNIOR YEAR.

The work of the Junior year consists of nine courses of instruction, all elective. The choice of studies must be approved by the Dean at the beginning of each term.

SENIOR YEAR.

The work of the Senior year consists of nine courses of instruction, all elective. The choice of studies must be approved by the Dean at the beginning of each term. A thesis of literary or scientific character acceptable to the Faculty will be required as one condition of graduation.

MISCELLANEOUS.

Information as to advanced degrees, scholarships, tuition fees, board and physical culture is given below.

Further information in regard to admission to advanced standing, rooms in the dormitories, examinations at a distance from St. Louis, and old examination papers, will be furnished to those who write to the Dean of the School of Engineering and Architecture.

GENERAL INFORMATION CONCERNING THE UNDERGRADUATE DEPARTMENT.

SPECIAL STUDENTS.

Special Students may be admitted to one or more courses in the Undergraduate Department upon the following conditions:—

1. That evidence of proper preparation, satisfactory to the committee and to the instructors concerned, be submitted before admission to any course or courses.

2. That candidates for degrees who fail in the work of the regular courses shall not have the privilege of becoming Special Students, unless such failure shall come from physical inability to do the required work.

3. That Special Students shall not be regarded as candidates for a degree.

For admission as Special Students in the College, application should be made to the Dean, Professor Snow; in the School of Engineering and Architecture, to the Dean, Professor Woodward.

LECTURE FOUNDATIONS.

A Lecture Endowment Fund, amounting to \$27,000, was created in 1875, by one of the early friends of the University, Mr. William Henry Smith. It was given without any restrictions, except that the fund should be increased, if practicable, by accruing interest, to \$30,000.

LIBRARY AND READING ROOM.

The library is now housed in the building erected for that purpose on the west side of the eastern quadrangle on the new University grounds. Extensive additions are being made to the collections of books, and all facil-

ities for study and research are provided. The large and beautiful reading room is provided with reference books and the best current literature. Upon its shelves are placed those books which are needed in each department for immediate reference and study.

Through the liberality of a number of citizens of St. Louis, eighty-eight memberships have been acquired in the Mercantile Library. The use of these memberships is extended under prescribed conditions, to such members of the University as may be designated by the Chancellor.

MORNING RELIGIOUS EXERCISES.

It has always been the custom of the University to open the daily work of the Undergraduate Department with brief religious exercises. Until November, 1902, these exercises were conducted by the Chancellor or by a member of the Faculty. In November, 1902, an invitation was extended to clergymen representing the various religious bodies of St. Louis to take the duty of conducting the service, each to serve one week. The invitation was cordially accepted and the following members of the city clergy have been at the University from March 21, 1904, to the third week in March, 1905, inclusive, in the order in which their names are given:—

1903-4.

- Mar. 21. Reverend George W. King,
Assistant Pastor, First Presbyterian Church.
- Mar. 28. Reverend Frank G. Tyrrell,
Christian Church.
- April 4. Reverend Jesse K. Brennan,
St. Mark's Memorial Episcopal Church.
- April 11. Reverend John T. Faris,
Markham Memorial Presbyterian Church.

- April 18. Reverend Harris H. Gregg,
Washington and Compton Ave. Presbyterian
Church.
- April 25. Reverend Charles N. Hunt,
Baptist Church.
- May 2. Reverend James H. Garrison, LL.D.,
Christian Church.
- May 9. Reverend Patrick F. O'Reilly,
Roman Catholic New Cathedral Chapel.
- May 16. Right Reverend Daniel S. Tuttle, S. T. D.,
Bishop of the Protestant Episcopal Church,
Diocese of Missouri.
- May 23. Reverend Frank W. Luce,
Maple Ave. Methodist Episcopal Church.

1904-5.

- Sept. 26. Reverend Mosheim Rhodes, D. D.,
St. Mark's English Evangelical Lutheran
Church.
- Oct. 3. Reverend John W. Day,
Unitarian Church of the Messiah.
- Oct. 10. Reverend George W. King,
Assistant Pastor, First Presbyterian Church.
- Oct. 17. Reverend Naphtali Luccock, D. D.,
Union Methodist Episcopal Church.
- Oct. 24. Reverend Baxter P. Fullerton,
Lucas Ave. Cumberland Presbyterian Church.
- Oct. 31. Reverend William W. Newell,
Compton Hill Congregational Church.
- Nov. 7. Reverend Crozier G. Adams, B. D.,
St. John's Episcopal Church.
- Nov. 14. Reverend Willard W. Boyd, D. D.,
Second Presbyterian Church, and
Reverend Carroll M. Davis,
Christ Church Cathedral.
- Nov. 21. Reverend Liverus H. Dorchester,
Lindell Ave. Methodist Episcopal Church.
- Nov. 28. Reverend Michael Burnham, D. D.,
Pilgrim Congregational Church.

- Dec. 5. Reverend John F. Cannon, D. D.,
Grand Ave. Presbyterian Church.
- Dec. 12. Reverend James R. Winchester, D. D.,
Episcopal Church of the Ascension.
- 1905.
- Jan. 3. Right Reverend Daniel S. Tuttle, S. T. D.,
Bishop of the Protestant Episcopal Church,
Diocese of Missouri.
- Jan. 9. Reverend Samuel E. Ewing,
Euclid Ave. Baptist Church.
- Jan. 16. Reverend James H. Garrison, LL.D.,
Reverend James M. Philputt,
Reverend Frank G. Tyrrell,
Christian Church.
- Jan. 30. Reverend William D. Bradfield, D. D.,
Cook Ave. Methodist Church.
- Feb. 6. Rabbi Samuel Sale,
Shaare Emeth Synagogue.
- Feb. 13. Reverend Edmund Duckworth,
St. James' Episcopal Church.
- Feb. 20. Reverend Robert A. Holland, S. T. D.,
St. George's Episcopal Church.
- Feb. 27. Reverend Francis W. Russell, D. D.,
West Presbyterian Church.
- Mar. 6. Reverend James M. Philputt, D. D.,
Union Ave. Christian Church.

The usual religious service with a brief address, at which attendance is entirely voluntary, occupies fifteen minutes, and has been a help to the University in many ways.

GENERAL ASSEMBLIES OF FACULTY AND STUDENTS.

Besides the daily morning services, upon the following days during the academic year special exercises are held at which all the teachers and students of the Undergraduate Department are expected to be present:—

1. On the first Monday of each term.

2. On the day before the Christmas vacation.
3. On February 21st, or some day near February 22d, which is the anniversary of the granting of the University charter in 1853.
4. On April 23d, the anniversary of the formal inauguration of the University in 1857.
5. On the last Friday before the beginning of the June examinations.

PHYSICAL TRAINING.

Ample provision is made for healthful and agreeable exercise in the gymnasium and in the spacious athletic field adjoining, under the supervision of a Director of Physical Training. The gymnasium is furnished with every appliance which is considered desirable in such a building, and the athletic field affords opportunity for all kinds of out-of-door sports, with masonry seats for spectators which will accommodate 10,000 persons.

SCHOLARSHIPS.

One perpetual scholarship, founded by the payment of \$5,000 and entitling the holder to all the advantages of all the departments of the University forever, has been placed at the disposal of the Mercantile Library Association, with the recommendation "that when the applicants for scholarship are of equal merit, the preference shall be given to one for some mechanical pursuit."

Two scholarships are also held by the St. Louis High School, one of which is given to the student graduating from the school in June with the highest record, and the other to the student graduating in January with the highest record. The scholarships entitle the holders to free tuition in the Undergraduate Department.

One scholarship is also held by the School Board of Kansas City for the benefit of the graduates of the Kansas City High School. This scholarship entitles the holder (who is to be selected by the School Board) to free tuition in the College or the School of Engineering. Reports of the standing of the student will be made to said Board annually by the Dean.

A trust fund of \$30,000 has been accepted by the University from the WESTERN SANITARY COMMISSION, for the establishment of TWENTY FREE SCHOLARSHIPS in the Undergraduate Department, to be filled by children or descendants of Union soldiers who served in the late Civil War. In default of such applicants, candidates will be appointed by the Chancellor of the University with the advice of the Faculty. Preference is given to those in straitened circumstances, *and no student is accepted or continued who is not of good moral character, who does not sustain satisfactory examinations or who fails to comply with the rules of the University.*

EXAMINATIONS.

The examinations in the Undergraduate Department are frequent and rigid. No promotions to higher classes are made except upon conclusive evidence that the antecedent subjects have been well mastered. Reports of the standing of individual students will be made by the Deans to parents or guardians, if such are requested.

DEGREES IN THE UNDERGRADUATE DEPARTMENT.

I. IN THE COLLEGE.

Until June, 1905, the degree of *Bachelor of Arts* will be conferred upon all candidates for the degree who shall have received credits for 114 units of work, equal to the satisfactory completion of thirty-eight full courses. After June, 1905, credits for 120 units or forty full courses will be required.

II. IN THE SCHOOL OF ENGINEERING.

The degree of *Bachelor of Science* is conferred on the satisfactory completion of four years' work.

No student will be recommended for a degree who has not passed all his examinations and handed in such projects or theses as may be required.

The diploma fee is three dollars, payable in advance.

ADVANCED DEGREES.

The degree of *Master of Arts*, which is granted after not less than one year of residence and study, is open to all who have received from this University the degree of Bachelor of Arts.

The professional degrees of *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer*, *Chemical Engineer*, and *Architect* are conferred upon those who have received the degree of Bachelor of Science, only after three

or more years of actual and successful practice, one year of which must have been spent in responsible charge of engineering or architectural work, and the presentation of an acceptable thesis; both the thesis and the experience should be such as to show an ability to design and execute high grade work.

The degree of *Master of Science*, which is granted after not less than one year of residence and study, is open to all who have received from this University the degree of Bachelor of Science, Civil Engineer, Mechanical Engineer, Electrical Engineer, Engineer of Mines, Chemist or Chemical Engineer, or Architect.

The degree of *Doctor of Philosophy*, which is granted after not less than two years of residence and study (the two years of residence and study may include the year of preparation for the Master's degree), is open to all who have received the degree of Master from this University.

The degrees of Master of Arts, Master of Science, and Doctor of Philosophy are open to graduates of other institutions who shall have satisfied the Committee on Advanced Degrees of their fitness.

Applications for candidacy for the degree of Master of Arts, Master of Science or Doctor of Philosophy are referred to a committee of five members of the Faculty of the Undergraduate Department, annually appointed, known as the *Committee on Advanced Degrees*.

Applications for candidacy for the professional degrees, mentioned above, are referred to a committee of four members of the Faculty of the School of Engineering annually appointed, known as the *Committee on Advanced Professional Degrees in the School of Engineering and Architecture*.

The Committee decides upon the admission of the candidate; determines the course of study which the

candidate is to pursue; determines by examination, thesis, or both, whether a candidate is suitably prepared for the degree; and recommends the granting of the degree to the Faculty of the Undergraduate Department.

REQUIREMENTS FOR THE MASTER'S DEGREE.

- a. At least one year of residence and study.
- b. Every candidate must pass such written examinations as the Committee on Advanced Degrees may see fit to prescribe.
- c. In addition to the work specified in each case, every candidate shall present a satisfactory thesis, which must be submitted not later than May 1 of the year in which the degree is to be conferred.

REQUIREMENTS FOR THE DOCTOR'S DEGREE.

- a. Two years of residence and study.
- b. Every candidate must satisfy the Committee on Advanced Degrees before being admitted to candidacy that he has a reading knowledge of French and German.
- c. Every candidate must pursue a minor study in a subject allied to the major subject chosen. The scope of such minor study is determined by the professors in charge of the major and minor studies, and is subject to the approval of the Committee on Advanced Degrees.
- d. Every candidate shall present an acceptable thesis, which shall be the result of original investigation. This thesis must be presented not later than April 1 of the year in which the degree is to be conferred; and every candidate must furnish the Committee on Advanced Degrees with 200 printed copies of his thesis, after its acceptance, before he can be recommended for the degree.

FEES.

Every candidate for the Master's degree is required to pay fifty dollars, and every candidate for the Doctor's degree one hundred dollars; one-half to be paid as a condition of admission to candidacy, and the remainder before the conferring of the degree.

The diploma fee is five dollars, payable in advance.

COMMITTEE ON ADVANCED DEGREES FOR 1905-1906.

The following members of the Faculty constitute the Committee for 1905-1906: Professors Snow (Chairman), Keiser (Secretary), Nipher, Heller and Shipley.

COMMITTEE ON ADVANCED PROFESSIONAL DEGREES IN THE SCHOOL OF ENGINEERING AND ARCHITECTURE FOR 1905-1906.

Professors Van Ornum (Chairman), Mann (Secretary), Fernald and Langsdorf.

TUITION.

Tuition in the Undergraduate Department for students in full standing is \$150 a year, payable semi-annually, in advance if required, and always before the middle of the term.

A matriculation fee of \$5, payable in advance, is required of all candidates for degrees.

Minimum tuition fee for special students in Architecture is \$50 a term with a fee of \$5 for each additional lecture hour, the total fee not to exceed \$75 a term.

Tuition for all other special students is \$15 a term for each course.

BOARD AND LODGING.

Rooms and board may be had in the two dormitories, Liggett Hall and Tower Dormitory, on the grounds of the University. Some of the rooms are arranged in suites, a sitting-room and two bed-rooms in each suite; others are large double rooms, intended for two persons; and there are also smaller single rooms. The University can provide the necessary articles of furniture for some of the rooms at a small annual charge, or students may furnish their own rooms.

A handsome dining hall with a seating capacity for one hundred and fifty persons is connected with the Tower Dormitory, where meals are furnished at cost. The price for board for 1904-5, including three meals a day, has been put at \$3.50 a week.

It is estimated that the yearly expenses may range between the following estimates, according to taste and habits of economy:—

Tuition	\$150 00	—	\$150 00
Board, lodging and washing, 9 months...	200 00	to	300 00
Books and instruments.....	10 00	"	20 00
Incidentals	15 00	"	30 00
Total for one year.....	\$375 00	to	\$500 00

HENRY SHAW
SCHOOL OF BOTANY

BOTANICAL DEPARTMENT
WASHINGTON UNIVERSITY

HENRY SHAW SCHOOL OF BOTANY.

ESTABLISHED JUNE 8, 1885.

ADVISORY COMMITTEE.

THE CHANCELLOR OF THE UNIVERSITY, *ex officio*,
WILLIAM G. FARLOW, M.D.

INSTRUCTORS.

WILLIAM TRELEASE, S.D., LL.D.,
DIRECTOR AND
ENGELMANN PROFESSOR OF BOTANY.

SAMUEL MONDS COULTER, Ph.D.,
ASSISTANT PROFESSOR OF BOTANY.

JAMES ARTHUR HARRIS, Ph.D.,
INSTRUCTOR.

ANDREW CREAMOR LIFE, A.M.,
INSTRUCTOR.

ELLEN C. CLARK,
ASSISTANT AT MARY INSTITUTE.

GENERAL INFORMATION.

In June, 1885, Mr. Henry Shaw, of St. Louis, authorized the Chancellor of the University to place before the Board of Directors a plan of action for the establishment of a School of Botany, as follows:—

That he proposed, with the concurrence of the Directors, to endow a School of Botany as a department of Washington University, by donation of improved real estate, yielding over \$5,000 revenue, and to place it in such relation with the largely endowed Missouri Botanical Garden and Arboretum as would practically secure their best uses, for scientific study and investigation, to the professor and students of the said School of Botany, in all time to come.

At a meeting of the Board of Directors held June 8, 1885, the following resolutions were, therefore, offered in grateful acceptance of Mr. Shaw's proposal:—

1. That a School of Botany be established as a special department of Washington University, to be known as the Henry Shaw School of Botany.
2. That a professorship of Botany be therein established, to be known as the Engelmann Professorship.
3. That Professor Wm. Trelease, of the University of Wisconsin, be invited to fill the same; his duties to begin at the commencement of the next academic year, September 17.
4. That said School of Botany be placed under the special care and direction of an advisory committee, to consist of five members, of whom two shall be members of this Board, and two shall be selected outside of the Board—the Chancellor of the University being a member *ex officio*.

This report was accepted and the resolution unanimously adopted. The record of such action was then submitted to Mr. Shaw and approved by him.

On this foundation, the School of Botany was opened in the autumn of 1885. In his will, admitted to probate in 1889, Mr. Shaw further provided for the maintenance of the income of the School up to a certain limit, and took steps calculated to secure the proposed close co-operation between the School of Botany and the Botanical Garden.

The equipment of the laboratory includes a small reference library and the necessary instruments, among which are one microscope by Zeiss, with the necessary objectives, ranging from A.A. to 1-18 in. oil immersion, and accessories for spectroscopic studies and work with polarized light; twenty microscopes by Leitz, with the objectives needed for the best work (including five 1-12 in. oil immersion lenses, one 1-16 in. oil immersion, and one 1-20 in. oil immersion), polariscope, camera lucidas of several patterns, etc.; sixteen dissecting microscopes by Bausch and Lomb; two dissecting microscopes by Leitz, one of them provided with camera lucida; a projecting apparatus for delineating objects under a low power of enlargement; a simple outfit comprising all that is necessary for ordinary bacteriological investigation; and good microtomes and other apparatus needed for histological work and elementary physiological experimentation. Students are provided by the laboratory with all necessary instruments and supplies (excepting razors or other cutting instruments) without charge except for breakage or other injury and for slides and cover glasses used for permanent preparations; but when alcohol or other expensive substances are used in quantity, as in work on bacteria, a special charge may be made for material used.

The working year of the School of Botany is of the same extent as that of the Undergraduate Department of the University and is similarly divided, except for a few special teachers' classes corresponding to the usual school terms.

The work offered students is of two classes: undergraduate studies, including at present ten stated electives, and post-graduate or special courses for advanced students, planned in each case to meet the needs of the student. For the convenience of students, nearly all elementary instruction is given at the University building, where the principal instrumental equipment is kept, but the study of living plants, and advanced herbarium and library work, are provided for at the Garden. All courses are given in the laboratory, and supplemented by lectures and quizzes by the teacher.

A list of the undergraduate electives is given above (p. 68), in the general information concerning the Undergraduate Department. Under the advice of the Dean of the College and the Professor of Botany, students who wish to make a specialty of botany through their course may arrange to take all of these electives and to follow them by a piece of investigation on which a thesis is to be based; and regularly enrolled special students who are not candidates for a degree may give the greater part of their time to botanical study, subject to such regulation as is prescribed by the Faculty.

Special classes for the benefit of teachers, and other persons not in attendance at the University, are formed from time to time, and such persons may be admitted to any of the regular electives on the payment of a tuition fee conformed to the general rates of the University, namely, \$15.00 for each full course (of three exercises per week during a term), and \$7.50 for each half course

(of less than three exercises per week for the same length of time).

Graduate students who are eligible under the rules of the Faculty to candidacy for a higher degree (p. 159), if suitably prepared, may elect research work in botany as their principal study for such degree; and such students have the full use of the large library, herbarium and collection of living plants at the Missouri Botanical Garden.

Applications for the formation of special classes, and all correspondence concerning the School of Botany, should be addressed to

WILLIAM TRELEASE,
Shaw School of Botany,
St. Louis, Mo.

ST. LOUIS SCHOOL OF FINE ARTS.

(ART DEPARTMENT OF WASHINGTON UNIVERSITY.)

Nineteenth and Locust Streets.

All communications in regard to the School should be addressed

ST. LOUIS SCHOOL OF FINE ARTS.

CALENDAR.

1904-1905.

FIRST TERM, DAY SCHOOL, begins Monday, September 26, 1904.

FIRST TERM, DAY SCHOOL, ends Saturday, December 17, 1904.

FIRST TERM, NIGHT SCHOOL, begins Monday, November 6, 1904.

FIRST TERM, NIGHT SCHOOL, ends Saturday, February 4, 1905.

SECOND TERM, DAY SCHOOL, begins Monday, December 19, 1905.

SECOND TERM, DAY SCHOOL, ends Saturday, March 18, 1905.

SECOND TERM, NIGHT SCHOOL, begins Monday, February 6, 1905.

SECOND TERM, NIGHT SCHOOL, ends Saturday, April 29, 1905.

THIRD TERM, DAY SCHOOL, begins Monday, March 20, 1905.

THIRD TERM, DAY SCHOOL, ends Saturday, June 10, 1905.

EXHIBITION OF STUDENTS' WORK, June 13-15, 1905.

1905-1906.

FIRST TERM, DAY SCHOOL, begins Monday, September 25, 1905.

FIRST TERM, DAY SCHOOL, ends Saturday, December 16, 1905.

FIRST TERM, NIGHT SCHOOL, begins Monday, October 30, 1905.

FIRST TERM, NIGHT SCHOOL, ends Saturday, January 27, 1906.

SECOND TERM, DAY SCHOOL, begins Monday, December 18, 1905.

SECOND TERM, DAY SCHOOL, ends Saturday, March 17, 1906.

SECOND TERM, NIGHT SCHOOL, begins Monday, January 29, 1906.

SECOND TERM, NIGHT SCHOOL, ends Saturday, April 21, 1906.

THIRD TERM, DAY SCHOOL, begins Monday, March 19, 1906.

THIRD TERM, DAY SCHOOL, ends Saturday, June 9, 1906.

EXHIBITION OF STUDENTS' WORK, June 12-14, 1906.

ST. LOUIS SCHOOL OF FINE ARTS.

REORGANIZED MAY 22, 1879.

The establishment of the Art School upon a broad and permanent foundation has always been part of the plan of Washington University. For nearly twenty-five years art instruction has been embodied in the course of study. In 1875, special students were admitted to the Drawing Department, and class and public lectures were given on Art History. The same year an evening school was opened.

On May 22, 1879, the Directors of the University adopted an ordinance establishing a Department of Art in Washington University, from which the following extracts are taken:—

“A Department of Art is hereby established as a special Department of Washington University, to be known as THE ST. LOUIS SCHOOL OF FINE ARTS.

“The objects of said Department shall be: Instruction in Fine Arts; the collection and exhibition of pictures, statuary, and other works of art, and of whatever else may be of artistic interest and appropriate for a public gallery or Art Museum; and, in general, the promotion by all proper means of æsthetic or artistic education.”

BOARD OF CONTROL.

ELLIS WAINWRIGHT, PRESIDENT.

WM. K. BIXBY, VICE-PRESIDENT.

WINFIELD S. CHAPLIN, CHANCELLOR, *ex officio*.

ROLLA WELLS.

ALFRED L. SHAPLEIGH.

CHARLES PARSONS.

CHARLES NAGEL.

SAUNDERS NORVELL.

EDWARD R. HOYT.

HALSEY C. IVES, DIRECTOR, *ex officio*.

INSTRUCTORS AND LECTURERS.

HALSEY COOLEY IVES, DIRECTOR,

Lecturer on the Historical Development of Art.

Pupil of Alexander Piatowski.

EDMUND HENRY WUERPEL,

Drawing and Painting from Life, and Composition.

Pupil of St. Louis School of Fine Arts, Bouguereau, Ferrier,
Aman-Jean, and l'Ecole des Beaux Arts.

CHARLES PERCY DAVIS,

Antique.

Pupil of N. Y. Art Students' League, Bouguereau, Ferrier
and Fleury.

SUSAN D'ARCY,

Secretary and Lecturer.

Pupil of St. Louis School of Fine Arts.

GRACE HAZARD,

Saturday Juvenile Class.

Pupil of St. Louis School of Fine Arts.

OSCAR WILLIAM RAEDER,

Mechanical and Architectural Drawing.

Pupil of St. Louis School of Fine Arts and Washington University.

HENRIETTA ORD JONES,

Ceramic Decoration and Pottery.

Pupil of St. Louis School of Fine Arts and Franz Bischoff and Otto Punsch.

FREDERICK LINCOLN STODDARD,

Design and Water Color,

Pupil of St. Louis School of Fine Arts, Bouguereau, Ferrier, Laurens, and Constant.

CORDELIA TAYLOR BAKER,

Bookbinding.

Pupil of I. J. Cobden-Sanderson, of Doves Bindery.

GEORGE JULIAN ZOLNAY,

Modeling and Sculpture.

Graduate of the Imperial Academy of Fine Arts, Vienna.

DAWSON WATSON,

Drawing and Painting from Life and Still-Life.

Pupil of Carolus Daran, Aimée Morot, Raphael Collin, Luc Olivier Merson and Mark Fisher.

FREDERICK GREEN CARPENTER,

(Substitute.)

Antique.

Pupil of St. Louis School of Fine Arts.

ANNA EMMILINE INGALLS,

Librarian.

In addition to the regular staff of instructors, pupil teachers are added from time to time from the advanced students working in the school.

GENERAL INFORMATION.

There are three terms in the year.

Students will be admitted at any time; special arrangements being made for those enrolling before or after the term begins.

The school furnishes instruction in Drawing, Modeling, Painting, Artistic Anatomy, Principles and Styles of Architecture, Perspective, Composition, Design and Applied Arts, Pottery, Ceramic Decoration, Bookbinding, Architectural and Mechanical Drawing.

The rooms are open for the study of drawing, painting and modeling every day during each term from 9 a. m. to 4 p. m.; and for the study of drawing from the Antique and Life, mechanical drawing and modeling, three evenings in the week, from November to May.

Students may enter any class upon submitting examples of work showing the necessary skill. Applicants for admission to the evening Life Class must submit a drawing of a full length figure from the Antique or Life.

Students who can pass the necessary examination may study Modern Languages, History and Literature in classes of the Undergraduate Department of the University.

The school is fully equipped with models, casts from the Antique, *et cetera*.

The class rooms are adjacent to the galleries of the Museum. The building, erected during the past years, was especially designed to meet the needs of the various classes of the school and, in its appointments, art students will find every convenience for study.

The artists connected with the school as teachers have received their training in the schools of our own country and in the Art Schools of Europe.

All finished work must be left in the school, or, if removed by special permission, must be returned before the close of the school year for final examination by the committee appointed for that purpose.

Instruction in all classes of the school is individual. Advancement of each student depends on the degree of proficiency only.

An admission fee of \$2.00 is charged each student on enrolling in the classes of the day school.

TUITION FEES.

TUITION FEES are due and payable to the Treasurer of Washington University, in advance, on enrollment, and on the first of each term. For convenience, the Secretary of the School will receive the fee and transmit it to the Treasurer.

ENROLLMENT FEE. Each student pays this fee once...\$ 2 00
The income from enrollment fees is used in library extension work. Students withdrawing before the end of the year in which the fee is paid may continue the use of the library to the close of the year.

RATES OF TUITION. Antique, Life and Portrait
Classes, either or all classes, per term..... 25 00

RATES OF TUITION. Saturday Class, Antique or Sketch
Class, per term..... 5 00
Students will be admitted to the Day School, per
month, with the privilege of one or more classes
per day, first month..... 12 50

Each following month during the term or the year.. 10 00

EVENING LIFE CLASS. Drawing or Modeling, three
times per week, for term of twelve weeks..... 7 50

EVENING CLASS. Antique (drawing from casts), three times per week, for term of twelve weeks..	\$ 5 00
EVENING CLASS. Elementary (free hand), three times per week, for term of twelve weeks.....	5 00
EVENING CLASS. Architectural and Mechanical Draw- ing, three times per week, for term of twelve weeks	5 00
EVENING CLASS. Modeling, three times per week, for term of twelve weeks.....	5 00

CLASSES IN DESIGN AND CERAMIC DECORATION.

Regularly enrolled Art Students will receive instruction in Design without extra charge.

For instruction in Ceramic Decoration and Bookbinding an additional fee, per term, of \$7.00 will be charged.

Special students will be admitted to these classes per term of twelve weeks.....\$25 00

Students enrolled for one month, first month..... 12 50

Each succeeding month..... 10 00

For a period less than one month, including freedom of Museum and Library, per week..... 5 00

For those desiring to work three days each week, every other day, the privilege will be given to work half the day in Ceramic Decoration or Bookbinding and the other half of the same day in one of the other classes of the School, per term 25 00

Special arrangements will be made for students wishing to enroll in the regular classes, three days per week.

ARRANGEMENT OF CLASSES.

MORNING.

CLASSES IN THE ANTIQUE.

Drawing from the Cast, elementary and advanced, daily, 9 to 12 a. m. Charles P. Davis, Instructor.

LIFE CLASS, NUDE AND DRAPED.

Drawing and Painting from the Nude and Costumed Model in Charcoal, Pastel and Oil Color, daily, except Saturday, 9 to 12 a. m. Edmund H. Wuerpel, Instructor.

CERAMICS AND POTTERY.

Decoration of China, Porcelain, and Glass; Evolution of form on the wheel, baking, glazing, etc. Tuesdays, Thursdays and Saturdays, 9 to 12 a. m. Henrietta Ord Jones, Instructor.

BOOKBINDING.

Forwarding and finishing, Tuesdays, Thursdays and Saturdays, 9 to 12 a. m. Cordelia T. Baker, Instructor.

COMPOSITION IN COLOR.

Wednesdays, 11:30 to 12:30. Edmund H. Wuerpel, Instructor.

COMPOSITION AND ILLUSTRATION IN BLACK AND WHITE.

Wednesdays, 11:30 to 12:30. Charles P. Davis, Instructor.

ARTISTIC ANATOMY.

Fridays, 12:15 to 1:00. Edmund H. Wuerpel, Instructor.

SKETCH CLASS IN BLACK AND WHITE.

Daily, 12:30 to 1 p. m. Free to all students.

PERSPECTIVE.

Mechanical and Freehand Perspective, Shades and Shadows. Winter term, Fridays, 12 to 12:30 p. m. Susan D'Arcy, Instructor.

Principles and Styles of Architecture, Thursdays at 12:30 p. m. George Julian Zolnay, Instructor. Special students may be enrolled in this class by arrangement with the Secretary.

AFTERNOON.**PAINTING FROM THE HEAD.**

Drawing and Painting from the Head in Charcoal, Pastel and Oil Color, daily, except Saturday, 1 to 4 p. m. Dawson Watson, Instructor.

PAINTING FROM STILL-LIFE.

Oil and Water Color, daily, except Saturday, 1 to 4 p. m. Dawson Watson, Instructor.

CERAMIC PAINTING.

Decoration of China, Porcelain and Glass; Mondays, Wednesdays and Fridays, 1 to 4 p. m. Henrietta Ord Jones, Instructor.

POTTERY.

Evolution of form on the wheel. Baking, glazing, etc., Mondays, Wednesdays and Fridays, 1 to 4 p. m. Henrietta Ord Jones, Instructor.

BOOKBINDING.

Forwarding and Finishing, Mondays, Wednesdays and Fridays, 1 to 4 p. m. Cordella T. Baker, Instructor.

CLASSES IN DESIGN AND APPLIED ART.

Book Cover Designing, Drawing for Illustration, Decoration of Wood and Leather by means of Pyrography (wood burning) and the Application of Color, Stained Glass Designing, Designing for Posters and Advertising Purposes, Decorative Composition, and Surface Decoration as applied to China, Embroidery and other surfaces, daily, except Saturday, 1 to 4 p. m. Frederick L. Stoddard, Instructor.

MODELING.

From architectural Ornament, the Antique, and Life, daily, except Saturday, 1 to 4 p. m. George Julian Zolnay, Instructor.

Special facilities are offered on Saturday mornings to teachers of the public schools.

EVENING CLASSES.

ANTIQUE, ELEMENTARY, AND ADVANCED.

Monday, Tuesday, and Thursday, 7:30 to 9:30 p. m. Charles P. Davis, Instructor.

LIFE CLASS FROM THE NUDE AND DRAPED MODEL.

Monday, Tuesday, and Thursday, 7:30 to 9:30 p. m. Edmund H. Wuerpel, Instructor.

MODELING.

Monday, Tuesday, and Thursday, 7:30 to 9:30 p. m. George Julian Zolnay, Instructor.

MECHANICAL DRAWING.

Geometrical Solids and Machine Details, etc. Monday, Tuesday, and Thursday, 7:30 to 9:30 p. m. Oscar W. Raeder, Instructor.

ARCHITECTURAL DRAWING.

Plans, Elevations and Assembled Drawings, Perspective, Orthographic Projection, etc. Monday, Tuesday, and Thursday, 7:30 to 9:30 p. m. Oscar W. Raeder, Instructor.

SATURDAY CLASSES.

JUVENILE CLASS.

Drawing from the Cast and Still-Life. Sketching in Water Color, 9 to 12 a. m. Grace Hazard, Instructor.

CLASS IN ILLUSTRATION IN BLACK AND WHITE.

9 to 12 a. m. Dawson Watson, Instructor.

ANTIQUE CLASS.

Drawing from Casts. 9 to 12 a. m. Charles P. Davis, Instructor.

CLASS IN ILLUSTRATION AND SKETCHING IN COLOR.

9 to 12 a. m. Frederick L. Stoddard, Instructor.

PAINTING FROM STILL-LIFE.

(Either Oil or Water Color.) 9 to 12 a. m. Dawson Watson, Instructor.

BOOKBINDING.

9 to 12 a. m. Cordelia T. Baker, Instructor.

POTTERY AND CERAMIC DECORATION.

9 to 12 a. m. Henrietta O. Jones, Instructor.

MODELING.

(From Cast and Ornamental Forms.) 9 to 12 a. m. George J. Zolnay, Instructor.

OUT-OF-DOOR SKETCHING, LANDSCAPE, AND FIGURE.

Upon recommendations from their teachers, classes will be formed from among the advanced students during the month of May, daily, 9 a. m. to 4 p. m. Criticisms by the various Instructors.

NOTES ON COURSE OF INSTRUCTION.

I.

In the Antique Classes the method of instruction aims to teach the students to construct their drawings in a simple and correct manner. By the use of antique and modern forms as models from which to draw, the student is trained to perceive planes and values, light and shade, and is taught to economize time and effort when striving to produce an effect. By this means a foundation is laid for the further training of the draughtsman, modeler and painter in the more advanced classes.

II. STILL-LIFE PAINTING CLASS.

Students begin the study of color in this class. They are first taught to observe and represent simple masses of form and color such as are found in fruits and vegetables. They are then given more difficult combinations, reflected lights and values such as are found in objects made in richly colored metals or other materials. They are also encouraged to make careful studies of drapery. The student may work in oil or water color, but whatever medium may be used, a truthfulness in form, color and value, simplicity of treatment, and close study of texture is required.

III. MODELING CLASS.

The work of the modeling class is of a threefold nature. First, there are a small number of students who study modeling with the intention of becoming sculptors; these students have every opportunity to study from the living model and also receive instruction in anatomy. Second, a large proportion of students study modeling in order to gain a more accurate knowledge

of form and proportion to aid them in their drawing and painting. These students work from the cast as well as from the living model, both nude and draped. The third class is composed largely of artisans working to acquire a knowledge of decorative form and ornament as used in architecture. To this end they work chiefly from casts of ornaments and figures from the antique and renaissance periods.

IV. HEAD AND PORTRAIT CLASS.

The purpose of study in the Head and Portrait Class is to accustom the student to grasp the essential character of the model.

Firm construction in drawing is insisted upon; also attention to the salient characteristics in form and color. Students are taught to sacrifice unimportant and unnecessary details in form and color, by this means gaining simplicity and strength in their work. Freedom of conception and execution is encouraged. The study of color values is insisted upon as more important than brush work and technique.

V. LIFE CLASS.

The last step in the academic training of the art student is the study from the living model. In the study from the nude, facility in construction, observation of character, correctness of proportion and values and a fearlessness of execution are essential. In painting from the nude, simplicity of form, value and color must follow good drawing. Method of execution is entirely individual whether in black and white or in color. The placing of the figure or object on canvas, with a view to composition, is demanded. In the advanced studies, the background is called for and atmospheric relief expected.

VI. DRAWING FOR ILLUSTRATION.

The purpose of this class is to give the student a knowledge of drawing and pictorial composition and to apply this knowledge to the production of illustrations in various forms. At first the work is from casts, natural forms and drapery, and later drawings are made from the living figure draped and nude. Constant effort is directed to the cultivation of a quickness of observation, the ability to draw correctly, the selection and arrangement of the material within the picture and an absolute simplicity of expression.

The various methods used are: **THE POINT**, the pencil, pen, and chalk—**THE BRUSH**, in gouache and wash; and **COLOR**, in oil, aquarelle, and pastel.

In black and white the student is urged to search for indicative rather than an absolute or real method of expression. Freedom of individual execution is encouraged.

In color the value and correctness of tone are considered above finish and execution.

In addition the student is impressed with the limitations imposed by the processes through which his drawing is transferred to the printed page. The aim is to familiarize the student with the requirements of these processes as well as to develop artistic feeling and the technical capacity to express it.

VII. CLASS IN APPLIED ART.

CERAMIC DECORATION.

The aim of this class is to give the students a practical knowledge of painting on china, glass, etc. Particular attention is given to the development of originality in design and simplicity in treatment. The student is

first taught to make a careful and intelligent study of the shape to be decorated and the space to be covered. Special attention is given to the application of conventional ornament as well as realistic forms. All firing is done in the building of the School so that a thorough knowledge may be obtained in the use of the kiln.

The students of this class will have the privilege of studying the large collections of decorated porcelain in the galleries of the Museum, comprehending examples of Doulton, Royal Worcester, Crown Derby, Danish, and Swedish ware. There are also collections of Old Chinese, Wedgwood and Rosenberg potteries.

VIII. POTTERY.

In the Pottery Class the student is taught to mix clay, to center and turn on the wheel, to evolve form, to bake the clay and to glaze in various processes.

Special stress is laid upon the process of evolution, as hand-turned work is becoming more and more rare; practical potters being in demand in all the potteries of this country.

IX. CLASSES IN DESIGN AND APPLIED ART.

In the class in Design, students are taught the history and development of ornament and its application. They are made to conventionalize natural forms for all kinds of ornamental and decorative purposes, and to distinguish proper from improper adaptations.

Instruction will be given in the following subjects: Book Cover Designing, Drawing for Illustration, Decoration of Wood and Leather by means of Pyrography (wood burning) and the Application of Color, Stained Glass Designing, Designing for Posters and Advertising Purposes, Decorative Composition, and Surface Decoration as applied to China, Embroidery and plain surfaces.

W. B. L.

All students of the School have access to the Library, which contains a large collection of books and plates referring to the above subjects.

By Applied Art is meant the practical carrying out of the design in the material for which the drawing has been made.

X. CLASS IN BOOKBINDING.

During recent years interest in *Fine Bindings* has had a revival. Many people are beginning to feel the beauty in a hand-bound volume; and a demand has arisen both for good binders, and for instruction in the processes by which books may be bound in an appropriate and original manner.

The class in Bookbinding aims to fill this want. Instruction is given in all the processes, from the forwarding to the finishing of a book. The students are expected to design their own book-covers; and from time to time will have opportunities of studying representative bindings of other countries as well as our own.

This class is under the direction of Miss Cordelia T. Baker, a pupil of Cobden-Sanderson.

XI. PRINCIPLES AND STYLES OF ARCHITECTURE.

This course is a summary which is to equip the students with a general knowledge of the history and artistic aspect of the various architectural periods.

The course is illustrated on the blackboard and from these demonstrations the pupils make their drawings for reference in their work. A concise knowledge of the various modes of expression in architecture and ornamentation is essential in the career of the artist.

The class meets once a week throughout the school year.

XII. MECHANICAL AND ARCHITECTURAL DRAWING.

Classes in these subjects are held only at night. Owing to the variety of knowledge and ability possessed by the student the instruction is largely individual.

Mechanical drawing includes the following branches:—

- I. Plane Geometrical Drawing, Orthographic Projection, Intersection of Solids and Development of Surfaces.
- II. Drawing of Machine Details from measurement.
- III. The making of Assembled Drawings.
- IV. Tracing.

The purpose of instruction is to teach students how to make practical working drawings, and to read them with ease.

In the Architectural Drawing Class beginners are taught how to use their instruments, and to make neat and accurate line drawings. Instruction is given in the preparation of plans, elevations and working drawings for various kinds of buildings. Advanced students are taught Perspective Drawing, and the Drawing of Ornamental Forms for decorative purposes.

CLASS LECTURES.

Class Lectures upon the History of Painting, the Graphic Arts, Artistic Buildings and Localities, and other subjects relating to the History of Art Development from the earliest period to the present time, are given in the Lecture Hall every Tuesday morning at 11, by a special corps of lecturers. The character and scope of these lectures may be judged from the following synopsis of the course for 1904-1905.

All lectures are fully illustrated by stereopticon views and examples from the Museum Collections.

LECTURE COURSE.

1904-1905.

- November 8. Introductory. *Prof. H. O. Ives.*
- November 15. The Sculpture in the Art Palace at the World's Fair. *G. J. Zolnay.*
- November 22. The True Principles of Design. *F. L. Stoddard.*
- November 29. The Relation of the Arts. *E. H. Wuerpel.*
- December 6. The Development of Pottery. *Miss H. O. Jones.*
- December 13. Three Epoch-Making Chapels in the History of Art: 1. The Arena Chapel—Giotto. *Miss A. M. More.*
- December 20. The Influence of National Characteristics on the Art of the North. *E. H. Wuerpel.*
- January 3. Three Epoch-Making Chapels in the History of Art: 2. The Brancacci Chapel—Masaccio. *Miss A. M. More.*
- January 10. The development of Mural Painting. *F. L. Stoddard.*
- January 17. Woman in Sculpture—Ancient. *G. J. Zolnay.*
- January 24. The Processes of Over and Under-Glaze. *Miss H. O. Jones.*
- January 31. The Influence of National Characteristics on the Art of the South. *E. H. Wuerpel.*
- February 7. Three Epoch-Making Chapels in the History of Art: 3. The Sistine Chapel—Michael Angelo. *Miss A. M. More.*
- February 14. "Styles" in Decoration. *F. L. Stoddard.*
- February 21. Woman in Sculpture—Mediæval. *G. J. Zolnay.*
- February 28. The Influence of the Barbizon School on the Development of Modern Art. *Miss A. M. More.*
- March 7. Decoration as Applied to Ceramics. *Miss H. O. Jones.*
- March 14. The Influence of National Characteristics on the Art of the West. *E. H. Wuerpel.*

March 21. The Application of Art to Industry.

F. L. Stoddard.

March 28. Woman in Sculpture—Modern.

G. J. Zolnay.

April 4. The Influence of L'Art Nouveau on Modern Pottery.

Miss H. O. Jones.

April 11. The Theory and Practice of Illustration.

F. L. Stoddard.

April 18. On the Proper Attitude of the Student Towards Art.

E. H. Wuerpel.

Lectures by Dr. Charles M. Kurtz and Mr. W. H. Fox, of the Art Department, World's Fair, will be announced later.

In addition to the regular lectures Mr. G. J. Zolnay will give a course on rudiments of Architecture, Mondays, at 12:30 p. m., beginning November 7th.

Other lectures may be announced from time to time.

June 6, 1904.

PROF. HALSEY C. IVES,

Director, St. Louis School of Fine Arts.

Dear Sir:—In submitting our report for awards to the students of the School, we wish to express our approval of the general excellence of the standard of work, and to compliment you, the instructors and the students on the exhibition of this year's work.

The jury in many cases found the work so uniformly good that it made the task of selection exceedingly difficult, inasmuch as the awards at their command were limited in number. They therefore recommend that the following students be publicly commended for the high standing of their work. We find that Mr. Fred Carpenter has been pronounced not competing in any class, a decision which we endorse, as also the decision that Mr. Fred Gray does not compete in the color work of the Life Class, and Miss Minnie Weber in the Still-Life Class. In the Still-Life Class we would endorse the good work of Mr. Einhorn; in the Black and White Sketch Class, that of Miss Caroline Bean, Miss Theresa Garrett, Mr. Harry Wingo, Mr. Manley Nash and Mr. Arthur Zeller. Miss Carrie Bribach's work in the Pottery Class is also commended. In the Juvenile Class, Oliver Mann and Tom Blakemore receive special mention.

The regular awards have been made as follows:—

ANTIQUÉ CLASS.

Kotaro Date, Bronze Medal.

Fred Heuser, Honorable Mention.

CLASS IN DESIGN.

Fred Heuser, Bronze Medal.

Miss Maud Lapham, Honorable Mention.

CLASS IN ILLUSTRATION.

Miss Agnes Lodwick, Bronze Medal.

Miss Helen O'Brien, Honorable Mention.

Miss Theresa Garrett, Honorable Mention.

PORTRAIT CLASS, BLACK AND WHITE.

K. H. Abrahamson, Bronze Medal.
Manley Nash, Bronze Medal.
Harry Wingo, Honorable Mention.
Arthur Zeller, Honorable Mention.

LIFE CLASS, BLACK AND WHITE.

Manley Nash, Silver Medal.
Miss Agnes Lodwick, Bronze Medal.
Miss Theresa Garrett, Honorable Mention.
Harry Wingo, Honorable Mention.

BOOKBINDING CLASS.

Miss Blanche Faulhaber, Honorable Mention.

COLOR SKETCH CLASS.

Manley Nash, Bronze Medal.

STILL-LIFE CLASS.

Mrs. A. D. Phelps, Silver Medal.
Miss Petronelle Sombart, Honorable Mention.
Miss Edna Emanuel, Honorable Mention.

COMPOSITION CLASS.

Miss Helen O'Brien, Silver Medal.
Manley Nash, Honorable Mention.

PORTRAIT CLASS, COLOR.

Fred Gray, Silver Medal.
Manley Nash, Honorable Mention.
Wm. McKillop, Honorable Mention.

MODELING CLASS.

Miss Adele Schulenburg, Bronze Medal.
Miss Margery Eby, Honorable Mention.
Miss Caroline Risque, Honorable Mention.

LIFE CLASS, COLOR.

Miss Helen O'Brien, Bronze Medal.

CLASS IN CERAMICS.

Miss Lulu Metzger, Silver Medal.
Miss Meta Kirsch, Bronze Medal.
Miss Fanny Nolan, Honorable Mention.

BLACK AND WHITE SKETCH CLASS.**K. H. Abrahamzon, Book Prize.**

Very respectfully,

(Signed) **Mrs. E. W. PATTISON,**
F. A. WHITING,
F. M. MANN.

THE ST. LOUIS MUSEUM OF FINE ARTS.

The Museum of Fine Arts has a valuable permanent collection of statuary, paintings, pottery, carvings, etc., which affords the public, as well as students, an indispensable aid to the study of art; and in order that opportunity may be given for studying the methods of the different schools of painting and the works of celebrated artists, arrangements have been made for a series of fine exhibitions of oil and water color paintings, architectural drawings and engravings.

Any one desiring to become a member of the Museum of Fine Arts may do so by the annual payment of \$10. This membership entitles him, with his family and non-resident guests, to the privilege of visiting the Museum at all times when open to the public, and to all lectures, receptions, and special exhibitions given under the auspices of the Board of Control.

SCHOOL OF FINE ARTS.

Students enrolled from date of issue of last catalogue,
March 26, 1904, to March 27, 1905:

Ahring, Otto	2329 Warren st.
Anderson, Mrs. Alice T.	Roswell, N. M.
Arnsby, Jennie	3963a Shenandoah av.
Ball, Mrs. Bert	5034 Vernon av.
Bannon, Etta	1903 Virginia av.
Barron, Maybelle	2009 Forest av.
Becraft, Cecil	4656 Page av.
Benner, Nellie	1903 Virginia av.
Berg, Florence	Alton, Ill.
Betzer, Frank	2846 Olive st.
Blanchard, Emma	DeSoto, Mo.
Blackman, Mrs. Mabel	Kansas City, Mo.
Blumenkranz, Molly	1602 Market st.
Bohn, Mrs. Emma	2618 Locust st.
Brandt, Mark	4528 Westminster pl.
Breen, Marguerite	1435 N. Newstead av.
Brewer, Halcyon R.	3710 Olive st.
Bribach, Carrie P.	6639 Virginia av.
Brown, Hazelwood	4860 Fountain av.
Buck, Ada	4047 Shenandoah av.
Budgett, Dr. S. P.	Fielding Hotel.
Burton, Cornelia R.	Carlinville, Ill.
Cassimus, George	4267 Olive st.
Cazort, Vivian	Fayetteville, Ark.
Chase, Ysobel H.	4535 Clayton av.
Clark, Mildred	4306 W. Belle pl.
Clopton, Malone	Paris, Tenn.
Costello, Margaret B.	3744 Cook av.
Cox, R. H., Jr.	5126 Morgan st.
Craig, N. B.	Steelville, Mo.
Creekmore, Margaret	Visitation Convent.
Cunning, Shirley A.	238 S. Newstead av.
Damon, Jos. A.	4101 Delmar av.
Date, Kotaro	810 Olive st.
Davis, Geraldine	Dallas, Tex.
Davis, Grover	1473 Belt av.
Davis, Mrs. Louise	4336 W. Belle pl.

De Wolfe, Marian
Donnell, Carson
Disch, Gustave A.
Drake, Nannie

Cleveland, Ohio.
Donaldson, Ill.
627 Harris av.
Warsaw, Mo.

Eby, Margery
Einhorn, Monroe
Emanuel, Edna

Bridgeton, Mo.
4024 W. Belle pl.
4517 Maffitt av.

Faulhaber, Blanche
Forrester, Fern

4301 Morgan st.
5047 Minerva av.

Galbraith, Aldene
Garesche, Lala
Garrett, Theresa A.
Gilbert, Samuel L.
Goergen, Eddie
Gorin, Josephine
Griswold, Mrs. Norman

Chapel Hill, Tenn.
6217 Plymouth av.
Crescent Hill, Ky.
Mena, Ark.
1398 Stewart pl.
5159 Minerva av.
Trenton, Tenn.

Hall, Mrs. L. E.
Haney, Natalie
Harmes, Alice
Harmon, A. F.
Heinz, C. L.
Helb, John
Hoehn, Veronica
Holthaus, Cora
Hubbell, Virginia A.

1505 Market st.
Albion, Ind.
2130 Wash st.
2948 Lawton av.
Shelbyville, Ill.
3201 Lucas av.
St. Charles, Mo.
4452 Delmar av.
5611 Cabanne pl.

Insley, Anna

Kansas City, Mo.

Janes, Eunice A.

4374 Washington av.

Kempe, Mrs. J. M. R.
Kenney, Willis P.
Kiehl, Christina
Kloepper, John
Kirsch, Meta R.
Kuhn, Mignonette
Kurtz, Julia

4058 Delmar av.
5123 Westminster pl.
Alma, Mo.
707 Russell av.
4621 Morgan st.
3409 Morgan st.
4632a Westminster pl.

Lachmund, Alice
Lanphear, Ethan
Lapham, Maude M.

3862 Russell av.
3544 Lindell av.
Springfield, Mo.

Lehmann, Dora
Less, Effie
Lodwick, Agnes I.
Long, Margaret B.

1418 Locust st.
3138 Pine st.
Ferguson, Mo.
3404 Pine st.

McKim, Mortie L.
Mahoney, Margaret
Manius, Albinus
Metzger, Lulu
Moore, Mildred
Murphy, Isabel

4571 Rutger st.
Alton, Ill.
2937 Dayton st.
Little Rock, Ark.
Webster Groves, Mo.
Eureka Springs, Ark.

Nagel, Hildegard
Nash, M. K.
Nast, Estelle
Nolan, Fanny
Noonan, Mrs. R. M.
Norris, Mrs. W. Leroy
Nulsen, Bernicé

3726 Washington av.
Commercial bldg.
4026 Delmar av.
Birmingham, Ala.
3149 Locust st.
East St. Louis, Ill.
3133 Hawthorne boul.

Oliver, Josephine

Lincoln, Mo.

Peters, Katherine
Peterson, Ida
Pheifer, Atlanta
Phelips, Mrs. A. D.
Preston, Stella M.
Price, Tom D.

3555 Lindell av.
New London, Iowa.
Edwardsville, Ill.
3925 McRee av.
4056 McPherson av.
5014 Cabanne av.

Reinert, Lillian
Rhea, Saidee
Robertson, Minnie
Roth, John J.
Ruff, Roy R.
Russell, Louise
Ryan, Maud

2320 Russell av.
Morganfield, Ky.
3815 Washington av.
4529 Laclede av.
Munday, Tex.
1636 Texas av.
Hartsville, Ala.

Salkey, Norma
Scammell, Elizabeth
Schmallhorst, Mrs. S.
Schulenburg, Adele E.
Scollard, Genevieve H.
Seasongood, Adele
Siegmond, Arthur P.
Smith, Erma G.

4124 W. Pine boul.
3805 Pine St.
8111 N. Broadway.
3213 Russell av.
4120 Morgan st.
4339 Washington av.
3235 S. Jefferson av.
5530 Etzel av.

Sombart, Petronelle	5933 Cates av.
Souther, Sarah C.	5118 Westminster pl.
Spalton, Arthur	Wichita, Kan.
Stadel, Geo. H.	2411 S. 13th st.
Stracke, Elsie D.	3305 Russell av.
Thalinger, Oscar	4649 Maffitt av.
Thomas, Jeanne	3717 Maffitt av.
Tirmenstein, Martin	3546 California av.
Townsend, Carroll S.	2002 Rutger st.
Trenz, Leo	2010 Gravois av.
Trueheart, Virginia	Sterling, Kan.
Vollrath, Meta	4552 Ashland av.
Von Bott, Mina	4565 Page av.
Warren, Mrs. Mary	Maplewood, Mo.
Webb, Mrs. A. J.	Omaha, Neb.
Wenner, Grace	Holton, Kan.
White, Lucille A.	Kirkwood, Mo.
Whitmire, Myrtle	Stillwell, Mo.
Wilson, Leslie F.	5841a Garfield av.
Wingo, Harry	5253a McPherson av.
Zeller, Arthur L.	7204 Pennsylvania av.

Students working in Full Time Classes.....	135
Students working in Saturday Classes.....	72
Students working in Night Classes.....	104
Total number enrolled.....	311

ST. LOUIS LAW SCHOOL

**LAW DEPARTMENT
WASHINGTON UNIVERSITY,**

CALENDAR, 1904-1905.

LAW SCHOOL opens Thursday, September 22, 1904.

HOLIDAY, THANKSGIVING DAY, Thursday, November 24, 1904.

VACATION, December 24, 1904, to January 2, 1905, inclusive.

HOLIDAY, WASHINGTON'S BIRTHDAY, Wednesday, February 22, 1905.

UNIVERSITY HOLIDAY, Friday, May 12, 1905.

COMMENCEMENT, Thursday, June 15, 1905.

VACATION, from June 15 to September 28, 1905.

EXAMINATIONS FOR ADVANCED STANDING, Tuesday, September 26, 1905.

LAW SCHOOL opens Thursday, September 28, 1905.

HOLIDAY, THANKSGIVING DAY, Thursday, November 30, 1905.

VACATION, from December 23, 1905, to January 1, 1906, inclusive.

FACULTY.

WINFIELD SCOTT CHAPLIN, LL. D.,
Chancellor of Washington University.

WILLIAM SAMUEL CURTIS, LL. B.,
Dean of Law Faculty.

AMOS MADDEN THAYER, LL. D. (U. S. Circuit Judge),
Professor, Real Property Law and Equity.

FRANKLIN FERRISS, LL. B.,
Professor, Law of Contracts and Commercial Law.

WILLIAM WINCHESTER KEYSOR, LL. B.,
Professor of Law.

GUSTAVUS ADOLPHUS FINKELNBURG,
Lecturer, International Law.

CHARLES NAGEL, LL. B.,
Lecturer, Constitutional Law.

CHARLES PHILIP JOHNSON, A. M.,
Lecturer, Criminal Law.

FREDERICK NEWTON JUDSON, LL. B.,
Lecturer, Taxation.

ISAAC HENRY LIONBERGER, A. M.,
Lecturer, Law of Corporations.

LEE SALE, LL. B.,
Lecturer, Partnership.

CAMPBELL ORRICK BISHOP (St. Louis Circuit Judge),
Lecturer, Criminal Law.

EDWARD SCOTT ROBERT, LL. B.,
Lecturer, Evidence.

HENRY THOMPSON KENT, LL. B.,
Lecturer, Jurisdiction of Federal Courts.

DANIEL NOYES KIRBY, LL. B.,
Lecturer, Agency.

ADVISORY AND EXAMINING BOARD.

LEROY B. VALLIANT, Justice of the Supreme Court of Missouri.

WARWICK HOUGH, late Justice of the Supreme Court of Missouri.

SHEPARD BARCLAY, late Justice of the Supreme Court of Missouri.

ELMER B. ADAMS, United States District Judge.

HENRY S. PRIEST, late United States District Judge.

C. C. BLAND, Judge of St. Louis Court of Appeals.

RICHARD L. GOODE, Judge of St. Louis Court of Appeals.

RODERICK E. ROMBAUER, late Judge of St. Louis Court of Appeals.

WILLIAM H. BIGGS, late Judge of St. Louis Court of Appeals.

HENRY W. BOND, late Judge of St. Louis Court of Appeals.

R. A. BAKEWELL, late Judge of St. Louis Court of Appeals.

DANIEL D. FISHER, Judge of St. Louis Circuit Court.

HORATIO D. WOOD, Judge of St. Louis Circuit Court.

WALTER B. DOUGLASS, Judge of St. Louis Circuit Court.

JESSE A. McDONALD, Judge of St. Louis Circuit Court.

DANIEL G. TAYLOR, Judge of St. Louis Circuit Court.

JACOB KLEIN, late Judge of St. Louis Circuit Court.

JAMES E. WITHROW, Judge of St. Louis Circuit Court.

DANIEL DILLON, late Judge of St. Louis Circuit Court.

WILBUR F. BOYLE, late Judge of St. Louis Circuit Court.

GEORGE W. LUBKE, late Judge of St. Louis Circuit Court.

JAMES A. SEDDON, late Judge of St. Louis Circuit Court.

JOHN W. NOBLE,
EDWARD C. KEHR,
JAMES TAUSSIG,
JOHN W. DRYDEN,
GEORGE H. SHIELDS,
CHAS. CLAFLIN ALLEN,
JOHN M. HOLMES,
LEVERETT BELL,
EDWARD T. FARISH,
EVERETT W. PATTISON,
JOHN E. McKEIGHAN,
HUGO MUENCH,
ELENEIOUS SMITH,
JAMES P. DAWSON,
DAVID GOLDSMITH,
FRED A. WISLIZENUS,
JOHN A. HARRISON,
WELLS H. BLODGETT,
E. T. ALLEN,
EBEN RICHARDS,
PENDLETON T. BRYAN,
EDWARD C. ELIOT,
PAUL F. COSTE,
JAMES P. MAGINN,
JOHN D. DAVIS,
WILLIAM B. HOMER,

FRED'K W. LEHMANN,
THOMAS K. SKINKER,
ROBERT F. WALKER,
WALTER D. COLES,
JAMES HAGERMAN,
ALBERT ARNSTEIN,
HARVEY L. CHRISTIE,
WILLIAM E. FISSE,
J. HUGO GRIMM,
PAUL BAKEWELL,
WM. E. GARVIN,
GEO. R. LOCKWOOD,
JOHN F. SHEPLEY,
A. C. STEWART,
GEO. M. BLOCK,
JOHN A. GILLIAM,
BENJ. SCHNURMACHER,
MILLARD F. WATTS,
CLIFFORD B. ALLEN,
ALBERT N. EDWARDS,
JOHN D. JOHNSON,
JOSEPH H. ZUMBALEN,
EDGAR R. ROMBAUER,
VIRGIL RULE,
PERCY WERNER,
Of the St. Louis Bar.

COMMITTEES OF EXAMINATION,
FOR THE YEAR 1904.

For the Examination of Candidates for Graduation.

PENDLETON T. BRYAN,
PAUL F. COSTE,
WARWICK HOUGH,
GEORGE P. B. JACKSON,
EDGAR R. ROMBAUER,
VIRGIL RULE,
PERCY WERNER.

*For the Award of a Prize of Fifty Dollars for the Best
Graduation Thesis.*

HICKMAN P. RODGERS,
BENJAMIN H. CHARLES,
CHARLES R. SKINKER.

HONORS, 1904.

ALBERT BARBER CHANDLER, Thesis Prize.

THOMAS BOND, Alumni Prize.

The Juniors who passed all the Junior examinations with an average grade of eighty per cent or over, and are therefore entitled to enter the Senior Class *cum laude*, are:—

HAROLD HOWARD SMITH, Festus, Mo., 93.89.

CHARLES MONTESQUIEU WILD, Sarcoxie, Mo., 91.55.

WOODLIEF THOMAS, St. Louis, 91.24.

ROBERT BURKHAM, St. Louis, 90.70.

THOMAS S. MCPHEETERS, JR., St. Louis, 90.67.

ROBERT EDWARD ADAMS, Odessa, Mo., 90.24.

WALTER HIGBEE, Lancaster, Mo., 90.24.

HENRY THEODORE FERRISS, St. Louis, 90.10.

EDWARD GLION CURTIS, St. Louis, 89.59.

FREDERICK ARMSTRONG, JR., St. Louis, 88.76.

THOMAS WILLIAM WHITE, Memphis, Tenn., 88.63.

OLIVER DEWERTHERN, St. Louis, 87.72.

WENDELL HOLMES CLOUD, Kiowa, Kan., 84.94.

ARTHUR EDWARD DENNIS, St. Louis, 84.28.

VICTOR HERMAN HEMPHILL, Carlinville, Ill., 84.07.

ELVIN DAVID GEORGE, Staunton, Ill., 83.57.

HARRY KING TOOTLE, St. Joseph, Mo., 83.43.

PHILIP BENJAMIN WHITE, Kirkwood, Mo., 82.46.

FRANCIS CHARLES O'MALLEY, St. Louis, 81.93.

HENRY POTTER, St. Louis, 80.73.

NORMAN JOSEPH SADLER, St. Louis, 80.55.

ROBERT MAURICE ZEPPENFELD, St. Louis, 80.31.

SENIOR CLASS.

	CITY RESIDENCE.
Adams, Robert Edward (B. S. Odessa College), Odessa, Mo.	2828 Locust St.
Armstrong, Frederick, Jr. (A. B. Wash. Univ.), St. Louis.	4236a Garfield Av.
Brackmann, Amandus, High Ridge, Mo.	3416 Nebraska Av.
Breitenbach, Adolph Henry, Mascoutah, Ill.	6643 Hancock Av.
Buchanan, Alexander Hutchinson, Ava, Mo.	2716 Dayton St.
Bucher, Carroll Strickland, Muskogee, I. T.	5266 Washington Av.
Burke, John Aloysius (A. B. Christian Bros. College), St. Louis, Mo.	4412 Lucky St.
Burkham, Robert (A. B. Princeton), St. Louis.	4537 Lindell Bl.
Caplan, Ephrim, St. Louis.	3947 McPherson Av.
Casey, Charles William, St. Louis.	3925 Evans Av.
Cloud, Wendell Holmes, Kiowa, Kan.	3414 Magnolia Av.
Curtis, Edward Glion (A. B. Wash. Univ.), St. Louis.	1748 Waverly Pl.
Dennis, Arthur Edward (A. B. Wash. Univ.), St. Louis.	5150 Page Av.
DeWerthern, Oliver, St. Louis.	3700 Hartford St.
Elder, Conway, St. Louis.	4853 Page Blvd.
Ferris, Henry Theodore (A. B. Cornell), St. Louis.	5828 Cabanne Pl.
George, Elvin David (B. S. Illinois College), Staunton, Ill.	3306 Morgan St.
Goodman, Burr Solon, St. Louis.	6205 Famous Av.
Hemphill, Victor Herman (B. S. Blackburn College), Carlinville, Ill.	3306 Morgan St.
Higbee, Walter (A. B. Mo. State Univ.), Lancaster, Mo.	2811 Washington Av.
Jacobs, Nathan Earle, St. Louis.	5266 Washington Av.

CITY RESIDENCE.

Johnson, Oliver Thul (A. B. Mo. State Univ.), St. Louis.	4028 Juniata St.
Mayhall, Frederick Arthur, St. Louis.	1133 Hamilton Av.
McChesney, Samuel Parker, St. Louis.	5619 Clemens Av.
McKeighan, Robert Cutler (Ph. B. Univ. Mich.), Webster Groves, Mo.	
McPheeters, Thos. S., Jr. (A. B. Princeton), St. Louis.	3824 Delmar Av.
Mitchell, Irvine G. (A. B. Westminster College), Kirkwood, Mo.	
Obert, Charles Louis, St. Louis.	2631 S. 12th St.
O'Malley, Francis Charles (A. B. Christian Bros. College), St. Louis.	1742 Euclid Av.
Orthwein, William Robert (A. B. Yale), St. Louis.	15 Portland Pl.
Ossing, Erwin, St. Louis.	1904 Warren St.
Phelan, John Martin, Pacific, Mo.	2811 Washington Av.
Potter, Henry (A. B. Yale), St. Louis.	5814 Cabanne Pl.
Ray, Samuel Glover, St. Louis.	4211 W. Pine Blvd.
Roberts, Arthur Chester, St. Louis.	4581 Garfield Av.
Rowe, Henry, St. Louis.	3736 Delmar Av.
Rowe, Thomas Joseph, Jr., St. Louis.	3736 Delmar Av.
Rowell, Carleton Ferriss (A. B. Yale), St. Louis.	4579 W. Pine Blvd.
Sadler, Norman Joseph, St. Louis.	4401 Delmar Av.
Sherman, Samuel, Fredericktown, Mo.	4700 Vernon Av.
Shields, Leighton (A. B. Harvard), St. Louis.	3665 Delmar Av.
Simms, Thomas Raymond, St. Louis.	4026 Delmar Blvd.
Smith, Harold Howard, Festus, Mo.	2811 Washington Av.
Stead, John Walter, Griggsville, Mo.	2711 S. Compton Av.
Thomas, Woodlief (A. B. Wash. Univ.), St. Louis.	5117 Westminster Pl.
Toney, Thomas Ellsworth, Virden, Ill.	2828 Locust St.
Trice, Walter Eugene, Cameron, Mo.	4049a W. Belle Pl.

CITY RESIDENCE.

Van Wormer, Dixon, St. Louis.	3414 Magnolia Av.
Weber, Kossuth Cayce, Farmington, Mo.	3400 Morgan St.
White, Philip Benjamin (A. B. Wash. Univ.), Kirkwood, Mo.	
White, Thomas William (A. B. Univ. of Mississippi), Memphis, Tenn.	4564 W. Pine Blvd.
Wild, Charles Montesquieu, Sarcoxie, Mo.	1505 Locust St.
Wilson, Alfred Chipley, St. Louis.	2837 Thomas St.
Wolfort, Jesse Arthur, St. Louis.	4353 Maryland Av.
Zeppenfeld, Robert Maurice, St. Louis.	3019 Henrietta St.

MIDDLE CLASS.

Beer, Edwin Hugo, St. Louis.	2345 S. Compton Av.
Bowling, Joseph Raphael (B. E. Tulane Univ.), St. Louis.	4537 Lindell Blvd.
Carroll, James Edward, St. Louis.	5152 Ridge Av.
Cordell, Robert Vaughan Montague, St. Louis.	1611 Missouri Av.
Crenshaw, Luther Winston, St. Louis.	3927 Delmar Blvd.
Dalton, George Crockett, Lenox, Mo.	2210 Adams St.
Davenport, Homer, Bidwell, Mo.	1827 Morgan St.
Gilbert, William Robert, St. Louis.	1620 S. Grand Av.
Gilster, John Fred, Chester, Mo.	2907 Harper St.
Goodbar, Alvan Jay, St. Louis.	3953 Westminster Pl.
Herbert, Oscar Louis (A. B. Christian Bros. College), St. Louis.	4869 Page Blvd.
McMillan, Clarence (A. B. Williams College), New York City.	4210 W. Belle Pl.
Richardson, Lilber Estel (A. B. Cen- tral College), St. Louis.	3121 Locust St.
Taylor, Joseph Argyle, St. Louis.	3119 Laclede Av.
Wood, Ben Artie (A. B. Mo. State Univ.), Holden, Mo.	3051 Page Av.

JUNIOR CLASS.

CITY RESIDENCE.

Alvis, Harry J., East St. Louis, Ill.	
Ancker, Clinton James, Clayton, Mo.	
Benecke, Ruby Waldo, Brunswick, Mo.	4254 Olive St.
Bracken, John Henry (A. B. St. Louis Univ.), St. Louis.	1429 Tamm Av.
Busiek, Erwin Henry, Belleville, Ill.	
Calhoun, John Wolfinger, St. Louis.	3024 Geyer Av.
Clayton, Burkett Sale (B. S. Wash. Univ.), Kirkwood, Mo.	
Compere, Comfort HeChigee, Hubbard City, Texas.	3437 Morgan St.
Cook, John William, Dexter, Mo.	3131 Washington Av.
Dierfeld, Otto Fred, Appleton City, Mo.	2901 Washington Av.
Dillon, Daniel, Jr. (A. B. St. Louis Univ.), St. Louis.	4389 W. Pine Blvd.
English, Eugene Wakeman, Macon, Mo.	4445 Page Av.
Haas, Harry Scheuer, St. Louis.	4204 Finney Av.
Hellmuth, Edgar Philip (A. B. Wash. Univ.), St. Louis.	3107 Brantner Pl.
Heyman, Lester Irving, St. Louis.	4004 Cook Av.
Homer, Roland Mather (A. B. Amherst College), St. Louis.	4409 Morgan St.
Ilgenfritz, Will McNair, Sedalia, Mo.	3131 Washington Av.
Lashley, Jacob Marx (A. B. St. Louis Univ.), St. Louis.	4129 Cook Av.
Lehmann, Frederick William, Jr., St. Louis.	10 Benton Pl.
Long, Samuel Miller Breckinridge (A. B. Princeton), St. Louis.	3404 Pine St.
Lucas, John Deaderick, St. Louis.	3947 W. Pine St.
Miller, Julien Gayle, Jackson, Mo.	4384 Laclede Av.
Morgan, William George (A. B. Lafayette College), Wilkes-Barre, Pa.	2811 Washington Av.

CITY RESIDENCE.

Mueller, Fred Ernest, Chesterfield Sta., Mo.	2228 Dodier St.
Nichols, Eugene Jaccard, Manchester, Mo.	3501 Lawton Av.
Overall, Monroe Nyce, Cameron, Mo.	4049a W. Belle Pl.
Overstoltz, Marie Emilie, St. Louis.	3439 Washington Av.
Osborne, Livingston Eugene, St. Louis.	6802 Bleeck St.
Rees, Harriet, Oswego, Ill.	1827 Morgan St.
Rice, Charles Marcus (A. B. Wash. Univ.), St. Louis.	3733 W. Pine St.
Sawyer, Ben Sebastian, El Paso, Tex.	4377 Chouteau Av.
Schaumberg, William Horace, St. Louis.	5110 Maple Av.
Sebastian, Paul, Edwardsville, Ill.	
Sherwood, Roderick McKenzie, St. Louis.	2 Lenox Pl.
Solomon, Sidney William, St. Louis.	4187 Washington Av.
Thompson, Grover Cleveland, Clarks-ville, Ark.	3526 Lindell Av.
Trueblood, Alva Cooper (A. B. Wash. Univ.), St. Louis.	5717 Vernon Av.
Vickroy, Samuel Perry, St. Louis.	3669 Botanical Av.
Vieregg, Walter Lee, Kansas City, Mo.	4568 Lucky St.
Wertheimer, Joseph Jacob (A. B. Harvard), St. Louis.	3511 Washington Av.
Wind, Leland Alexander (A. B. Princeton), St. Louis.	4449 Morgan St.

Senior Class	55
Middle Class	15
Junior Class	41
Total.....	111

GENERAL INFORMATION.

The St. Louis Law School was established as a department of Washington University in 1867. A class was graduated in 1869, and one class each year since. The special endowment of the Law School now amounts to \$77,500.

After September 1st, 1905, the School will occupy exclusively a very complete and beautiful building at the southwest corner of Twenty-ninth and Locust streets.

THE LIBRARY.

The School is especially well equipped with that necessary aid to a legal education, a library.

The four classes of law books, reports, statutes, digests and treatises are very fully represented and made accessible by card catalogue, lists, etc.

Reports being the most important class, the following details are given:—

Of reports issued in the United States the collection is complete to date, and embraces the following sets:—

U. S. Supreme Court.

U. S. Circuit Court (all circuits).

U. S. Circuit Court of Appeals.

Federal Reporter.

Alabama, Arizona, Arkansas, California, Colorado (Supreme and Appellate), Connecticut, Dakota Territory, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois (Supreme and Appellate), Indiana (Supreme and Appellate), Iowa, Kansas (Supreme and Appellate), Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Missouri (Supreme and Appellate), Montana, Nebraska, Nevada, New Hampshire, New Jersey (Law and

Equity), New Mexico, New York (Chancery, Vice-Chancery, Common Law, Court of Appeals, Supreme Court, Appellate Division, Superior Court, Common Pleas, Surrogate, Criminal, Miscellaneous, Practice Reports), North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas (Supreme and Appellate), Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, American Decisions, American Reports, and American State Reports.

Of English Reports, the series known as the English Law Reports and beginning in 1865 is complete to date, and of the Reports issued prior to that time, of the five great courts, House of Lords, Chancery, King's Bench, Common Pleas, and Exchequer, the collection is very complete, lacking only the very rare volumes.

By the generosity of the Alumni and other friends the school library was augmented last year by the purchase of the law library formerly installed in the Missouri Trust Building.

Thus three-fourths of the mass of American and English reports is in duplicate, furnishing to the Faculty a working place additional to the main library room. The School owns altogether over 18,000 volumes.

ADMISSION.

Applicants for admission to the School must have a preliminary education equivalent to a four years' High School course.

A college diploma, proof of admission to college, or certificate of graduation from a High School having a four years' course, will be received as evidence of fitness to enter. Applicants not presenting such documentary evidence may pass an examination to test their compliance with the above requirement.

Students may be admitted to the Middle and Senior Classes only upon examination in the subjects already completed by the classes they desire to join, and not upon any certificate of attainments, or previous study or attendance elsewhere. Examination of such new students for advanced standing will begin Tuesday, September 26, 1905, at 9 a. m., at the Law School, Twenty-ninth and Locust streets. At the same time will be held such examinations of other students, to make up conditions, as the Faculty shall have authorized.

COURSE OF STUDY.

The method of instruction is by text-books and cases.

The course is one of three years of thirty-six weeks each, leading to the degree of LL. B.

The recitations are held at 8:45 to 9:45, and at 9:45 to 10:45 a. m., and at 4 and 5 p. m. The School Moot-Court is held on Saturday mornings, and the regular Faculty examinations are at 2 p. m. throughout the year, upon the completion of each topic.

JUNIOR CLASS.

(Subjects, books used, number of hours of recitation, and instructors.)

ELEMENTARY LAW. Robinson's Elementary Law, and Blackstone's Commentaries. Sixty hours. Curtis.

CONTRACTS. Bishop on Contracts, and a case-book. Eighty hours. Ferriss.

TORTS. Cooley on Torts, and a case-book. Seventy hours. Keyser.

CRIMINAL LAW AND PROCEDURE. May's Criminal Law and Lectures. Forty hours. Johnson and Bishop.

AGENCY. Huffcut on Agency, and a case-book. Forty hours. Kirby.

DAMAGES. A case-book. Thirty hours. Keyser.

COMMON LAW PLEADING. Martin's Civil Procedure at Common Law, and a case-book. Forty hours. Curtis.

MIDDLE CLASS.

REAL PROPERTY. *Tiedeman*, and a case-book. Eighty hours. Thayer.

SALES. *Benjamin*. Sixty hours. Keysor.

DOMESTIC RELATIONS. *Schouler*. Forty hours. Curtis.

PARTNERSHIP. *Burdick*, and a case-book. Thirty hours. Sale.

BAILMENTS. *Schouler*. Forty-eight hours. Keysor.

EVIDENCE. *Greenleaf*. Forty hours. Robert.

BILLS AND NOTES. *Tiedeman*. Thirty hours. Keysor.

CODE PLEADING. *Bryant*, and a case-book. Thirty-two hours. Curtis.

SENIOR CLASS.

(Details to appear in next catalogue.)

Equity, Equity Pleading, Constitutional Law, Corporations, Insurance, Jurisdiction of Federal Courts, Statutory Construction, International Law, Comparative Jurisprudence, Administration.

The Senior Classes of 1905 and 1906 will pursue a course as outlined in prior catalogues, the year 1904-5 being the first since adopting the three years' course.

MOOT-COURT.

A Moot-Court is held weekly throughout seven months of the year. It is conducted, as nearly as possible, with the forms of an ordinary court of justice, and students are expected to draw pleadings in the cases assigned to them, and to conduct them through all the stages of a legal or equitable suit before trying the issue in the Moot-Court. Members of the Senior Class may be appointed to sit as Associate Justices and required to write opinions. Both classes will be assigned to argue cases in these courts. The Moot-Court Record is a weekly published by the School, containing the Statements of Facts, Briefs and Opinions.

FEES AND EXPENSES.

The annual tuition fee for students entering September, 1904, or thereafter, is \$100, payable in advance. There are no extra charges of any kind. No reduction will be made from the term fee, nor any part of it returned for absence from any cause.

The average cost of board and lodging paid by law students has been ascertained to be about \$20 per month.

The expense of text-books for the entire course is about \$100.

SCHOLARSHIPS AND PRIZES.

In pursuance of the terms of a donation of \$6,000 heretofore made to the University for the benefit of the Law School, *six free scholarships* are established in this department; also an annual prize of \$50 in money for the best thesis upon some legal topic, to be publicly awarded at Commencement. Competition for this prize is confined to the regular members of the graduating class in each year under regulations duly announced.

The Alumni Association of the St. Louis Law School offers a prize of \$50 to that member of the Senior Class who shall attain the highest general average in examinations, including the regular Faculty examinations of the whole course, as well as the final examination.

Applicants for *free scholarships* should apply in person or by letter to the Dean, on or before the fifteenth day of September, furnishing written testimonials of at least two responsible persons, that the pecuniary circumstances of the applicant are such as to make him deserv-

ing of this assistance, that he is of good character and standing, and that he has received the required education. Other things being equal, preference will be shown to candidates who have received a collegiate education, and especially to those who have done this wholly or partially by their own efforts. Applicants not personally known to any of the Faculty, will do well to state fully and precisely their age, place of birth and residence, present occupation, education, both general and legal, and any other circumstances that may be of weight in making a selection. Such communications will be held strictly confidential.

As the applicants for *free scholarships* are usually far in excess of the number that can be given, no student will hereafter have the benefit of such scholarship for more than one year.

Four students have an opportunity to earn their tuition and a small salary in addition, by service as librarians, and in other capacities connected with the work of the School. Applications for such positions must be made in person, on or before the fifteenth day of September.

GRADUATION.

Members of each class, in order to pass into the next class, must attain an average of 65 per cent in the examinations of the year. Members of the Senior Class in order to be admitted to the final examination for the degree of LL. B., must attain an average of 65 per cent in the examinations of the year. The above examinations are all written and are conducted by the Faculty.

The examination for the degree of LL. B. is prescribed and conducted by a committee of the Advisory

and Examining Board. This examination is also written and occupies about one week. The Board is composed of leading members of the judiciary and bar of St. Louis, selected by the Directors of the University. Each senior is required to present, on or before May 15, an original thesis upon a legal topic selected by the Faculty. The subject of the thesis for the class of 1904 was:—

“The Status of Purchasers for Value Without Notice.”

For further information, address St. Louis Law School, St. Louis, Mo. (1417 Locust street until September 1, 1905, and Twenty-ninth and Locust streets thereafter), or William S. Curtis, Dean of the School, or the Secretary of Washington University.

MEDICAL DEPARTMENT
OF
WASHINGTON UNIVERSITY

CALENDAR.

1905.

ENTRANCE EXAMINATION, conducted by an examiner appointed by the Chancellor of Washington University, will be held Friday, September 29th, and Saturday, September 30th, at 1806 Locust street.

ACADEMIC YEAR will begin Monday, October 2d.

EXAMINATIONS will be held Saturday, October 7th, as follows:

(a) for removal of conditions in special subjects.

HOLIDAY, Thursday, November 23d, Thanksgiving Day.

CHRISTMAS RECESS will begin Thursday, December 21st, and end Wednesday, January 3, 1906.

1906.

MID-YEAR EXAMINATIONS will begin Monday, January 22d, and end Saturday, January 27th. During this week all other work will be suspended.

SECOND HALF-YEAR will begin Monday, January 29th.

HOLIDAY, Thursday, February 22d, Washington's Birthday.

EXAMINATIONS will be held from Monday, May 14th, to Saturday, May 19th, as follows: (a) in special subjects; (b) for removal of conditions; (c) for admission to the third year class and for graduation. During this week all other work will be suspended.

COMMENCEMENT will be held Thursday, May 24, 1906.

MEDICAL DEPARTMENT.

BOARD OF OVERSEERS.

ELISHA H. GREGORY, Chairman.

ROBT. LUEDEKING, Dean,

G. BAUMGARTEN, Secretary.

CHARLES NAGEL,

ADOLPHUS BUSCH,

ISAAC H. LIONBERGER,

HERMAN TUHOLSKE,

EDWARD MALLINCKRODT,

HORATIO N. SPENCER.

FACULTY OF MEDICINE.

WINFIELD SCOTT CHAPLIN, LL.D.,

Chancellor of the University, Washington University.

PAUL GERVAIS ROBINSON, A.B., M.D., LL.D.,

*Emeritus Professor of the Principles and Practice of
Medicine.*

JEROME KEATING BAUDUY, M.D., LL.D.,

*Emeritus Professor of Psychological Medicine and Diseases
of the Nervous System.*

ELISHA HALL GREGORY, M.D., LL.D.,

Professor of the Principles of Surgery.

GUSTAV BAUMGARTEN, M.D.,

Professor of the Practice of Medicine.

HERMAN TUHOLSKE, M.D.,

Professor of the Practice of Surgery and Clinical Surgery.

WASHINGTON EMIL FISCHER, M.D.,

Professor of Clinical Medicine.

ROBERT LUEDEKING, M.D.,

Professor of the Diseases of Children, Dean, 1837 Lafayette Avenue.

JUSTIN STEER, Ph.B., M.D.,

Professor of Clinical Medicine.

W. A. HARDAWAY, A.M., M.D., LL.D.,

Professor of Diseases of the Skin and Syphilis.

HORATIO N. SPENCER, A.M., M.D., LL.D.,

Professor of Otolaryngology, Treasurer, 2725 Washington Avenue.

WILLIAM CARR GLASGOW, A.B., M.D.,

Professor of Clinical Medicine and Laryngology.

HENRY SCHWARZ, M.D.,

Professor of Obstetrics.

PAUL YOER TUPPER, M.D.,

Professor of Applied Anatomy and Operative Surgery.

EDWARD WATTS SAUNDERS, M.D.,

Professor of Diseases of Children and Clinical Midwifery.

NORMAN B. CARSON, M.D.,

Professor of Clinical Surgery.

JOHN BLASDEL SHAPLEIGH, A.B., M.D.,

Professor of Otolaryngology.

SIDNEY PAYNE BUDGETT, M.D.,

Professor of Physiology, Registrar, 1806 Locust Street.

WILLIAM HOMER WARREN, A.M., Ph.D.,
Professor of Chemistry, Secretary, 1806 Locust Street.

ROBERT JAMES TERRY, A.B., M.D.,
Professor of Anatomy.

JOHN GREEN, M.D.,
Special Professor of Ophthalmology.

FRANCIS RHODES FRY, A.M., M.D.,
Professor of Diseases of the Nervous System.

FRANK ADAMS GLASGOW, A.B., M.D.,
Professor of Clinical Gynecology.

HARVEY GILMER MUDD, M.D.,
Professor of Fractures and Dislocations, and Clinical Surgery.

EDGAR MOORE SENSENEY, M.D.,
Professor of Diseases of the Throat, Nose and Chest.

AARON J. STEELE, M.D.,
Professor of Orthopedic Surgery.

JOSEPH GRINDON, Ph.B., M.D.,
Professor of Clinical Dermatology and Syphilis.

ERNST FRIEDRICH TIEDEMANN, M.D.,
Professor of Pathology and Bacteriology.

CHARLES NAGEL, LL.B.,
Professor of Medical Jurisprudence.

HENRY MILTON WHELPLEY, Ph.G., M.D., F.R.M.S.,
Professor of Materia Medica and Pharmacy.

GEORGE MARVINE TUTTLE, A.B., M.D.,
Professor of Therapeutics.

ELSWORTH SMITH, JR., A.M., M.D.,
Clinical Professor of Medicine.

DAVID C. GAMBLE, M.D.,
Clinical Professor of Diseases of the Ear.

HENRY STURGEON CROSSEN, M.D.,
Clinical Professor of Gynecology.

HENRY LINCOLN WOLFNER, M.D.,
Clinical Professor of Diseases of the Eye.

ARTHUR EUGENE EWING, A.B., M.D.,
Clinical Professor of Diseases of the Eye.

EDWIN CLARK BURNETT, M.D.,
Clinical Professor of Genito-Urinary Diseases.

HARRY McCABE JOHNSON, M.D.,
Clinical Professor of Genito-Urinary Surgery.

VILRAY PAPIN BLAIR, A.M., M.D.,
Associate Professor of Anatomy.

JAMES FRANCIS ABBOTT, A.M.,
Adjunct-Professor of Embryology.

LECTURERS.

CHARLES HENRY DIXON, M.D.,
Clinical Lecturer on Surgery.

GREENFIELD SLUDER, M.D.,
Clinical Lecturer on Diseases of the Nose, Throat and Chest.

LOUIS HENRY BEHRENS, M.D.,
Clinical Lecturer on Diseases of the Chest.

ALBERT ERNST TAUSSIG, A.B., M.D.,

Clinical Lecturer on Medicine.

HENRY C. HARTMAN, M.D.,

Clinical Lecturer on Surgery.

GIVEN CAMPBELL, JR., M.D.,

Clinical Lecturer on Diseases of the Nervous System.

WILLIS HALL, M.D.,

Clinical Lecturer on Venereal Diseases of Women.

JOHN ZAHORSKY, M.D.,

Clinical Lecturer on Diseases of Children.

PHILIP HOFFMANN, M.D.,

Clinical Lecturer on Orthopedic Surgery.

HENRY S. BROOKES, Ph.G., M.D.,

Clinical Lecturer on Medicine.

LLEWELLYN P. WILLIAMSON, Capt., Ass't Sur., U. S. A.,

Lecturer on Hygiene and Sanitary Science.

INSTRUCTORS.

ANATOMY.

WILLIAM THOMAS COUGHLIN, M.D.,

Instructor in Anatomy.

PATHOLOGY AND BACTERIOLOGY.

RALPH WALTER MILLS, B.Sc., M.D.,

Instructor in Pathology and Bacteriology.

MEDICINE.

JESSE S. MYER, M.D.,

Instructor in Clinical Chemistry and Microscopy.

WILLIAM HARVEY RUSH, B.Sc., A.M., M.D.,
Instructor in Clinical Chemistry and Microscopy.

WALTER BAUMGARTEN, A.B., M.D.,
Instructor in Clinical Chemistry and Microscopy.

C. A. W. ZIMMERMANN, M.D.,
Instructor in Medicine.

L. H. HEMPELMANN, M.D.,
Instructor in Clinical Medicine.

JOHN CLEVELAND SALTER, A.B., M.D.,
Instructor in Clinical Chemistry and Microscopy.

LOUIS M. WARFIELD, A.B., M.D.,
Instructor in Clinical Chemistry and Microscopy.

SURGERY.

HENRY ARTHUR GEITZ, M.D.,
Instructor in Minor Surgery and Bandaging.

WILLARD BARTLETT, M.D.,
Instructor in Surgical Pathology.

ERNST JONAS, M.D.,
Instructor in Clinical Surgery.

JOHN C. MORFIT, M.D.,
Instructor in Clinical Surgery.

OBSTETRICS.

B. W. MOORE, M.D.,
Instructor in Obstetrics.

GEORGE GELLHORN, M.D.,
Instructor in Gynecological and Obstetrical Microscopy.

PEDIATRICS.

WALTER L. JOHNSON, M.D.,
Instructor in Clinical Pediatrics.

ORTHOPEDIC SURGERY.

FRED B. HALL, M.D.,
Instructor in Orthopedic Surgery.

NATHANIEL ALLISON, M.D.,
Instructor in Orthopedic Surgery.

OPHTHALMOLOGY.

WILLIAM ALFRED SHOEMAKER, M.D.,
Instructor in Ophthalmoscopy.

JOSEPH W. CHARLES, A.B., M.D.,
Instructor in Pathological Histology of the Eye.

M. WIENER, M.D.,
Instructor in Ophthalmology.

OTOLOGY.

SELDEN SPENCER, A.B., M.D.,
Instructor in Otology.

A. F. KOETTER, M.D.,
Instructor in Otology.

LARYNGOLOGY.

HANLEY CLAY CREVELING, M.D.,
Instructor in Clinical Laryngology.

NEUROLOGY.

MALCOLM ANDREWS BLISS, M.D.,
Instructor in Clinical Neurology.

GENERAL INFORMATION

On arriving in Saint Louis at the Union Station, students are within five minutes' walk of the main building of the Medical Department, 1806 Locust street. The offices of the School are in this building, and students are requested to come here for all information.

It would be to the advantage of students if they would register a few days in advance of the opening exercises and secure boarding places, so that their studies may not be interrupted in the beginning.

Students may register and pay all fees at the office of the Dean, which will be open daily throughout the year from 11 a. m. until 1 p. m. *Positively no students will be admitted for the session of 1905-1906 later than October 14; but students may matriculate for the session of 1906-1907 at any time before or after this date.*

The officers of the School, or Y. M. C. A. of this department, will give students information as to rooms, boarding, etc. Board and lodging at a convenient distance from the School may be obtained at from sixteen to twenty dollars a month. In this connection attention is called to the Washington University Dormitories and Commons, in which students of the Medical Department may lodge and board.

Physicians or alumni, who may wish to receive regularly the Quarterly Bulletin, which includes the Annual Announcement of the School, are requested to make written application to the Dean of the Faculty. Notice of change of residence is desired. All further information may be obtained by addressing:

DEAN OF THE MEDICAL DEPARTMENT,
WASHINGTON UNIVERSITY,
1806 Locust Street,
St. Louis, Mo.

BRIEF HISTORICAL SKETCH.

Early in the year 1899 the respective Faculties of the St. Louis Medical College and of the Missouri Medical College took certain preliminary steps looking to the union of these two institutions. With this end in view both faculties resigned, and in due course combined to form the Medical Department of Washington University, of which the present session of 1904-1905 is the sixth since the union of the two older schools in 1899.

The Missouri Medical College was founded in 1840, and with the exception of the years of the Civil War had given continuous instruction up to 1899.

The St. Louis Medical College was founded in 1842, and had just completed its fifty-eighth consecutive annual course. Under an ordinance enacted in 1891, it was created the Medical Department of the Washington University, and has continued in that relation since that time.

This union of the two oldest and most representative of the medical colleges in the West was undertaken and successfully consummated solely in behalf of a broader and more thorough training, and we firmly believe that this object has been accomplished.

As will be seen in another place, there has been a considerable increase in the size and effectiveness of the teaching force. The University has at its disposal two new and finely equipped college buildings, and the facilities for clinical work have been greatly multiplied.

The graded course of study now some time established has been elaborated and extended as experience has dictated, and always in the direction of higher standards and broader teaching. Now that four years of attendance prior to graduation have been adopted and required from all candidates, it has become possible to introduce

new features in the plan of instruction, by which the student will gain greater leisure for his work and more liberty in the selection of his studies.

A distinctive feature of the Medical Department of the Washington University is the requirement of and full provision for extended laboratory work, by every student, in all the fundamental subjects of medical study. The extent and scope of the required practical work in Anatomy and in Chemistry have been greatly enlarged, and full laboratory courses are given in Practical Anatomy, Histology, Vertebrate Embryology and Organology, in Physiology, Pharmacy, Medical Chemistry, in Pathological Anatomy and in Bacteriology. The actual making of post-mortem examinations by the student himself is a feature of the instruction.

In general the method of teaching pursued in this institution will be, so far as practicable, that of direct personal instruction of each student. In addition to the usual methods of lectures, didactic and clinical, there are recitations from the text-books, and clinical conferences, in which the student examines the patient and submits a written report of his diagnosis for criticism and discussion.

The library, at present numbering four thousand five hundred volumes, has been classified and catalogued and books are issued both for use in the reading room and at home.

Most of the best medical journals in English are received and in addition thirty-nine journals of the sciences pertaining to medicine.

HOSPITALS AND DISPENSARIES.

Especial attention is called to the unusual clinical advantages offered the student in connection with the

large number of Hospitals and Dispensaries directly under the control of the Medical Department of the Washington University.

WASHINGTON UNIVERSITY HOSPITAL AND DISPENSARIES.

The Washington University Hospital, which belongs to the Medical Department and is for the exclusive use of its students and clinical teachers, has been completed and has been in operation during the last half of the present school year.

The desire to have a hospital under the control of the Faculty, where all of the clinical studies and accompanying laboratory work of the Junior and Senior years could be offered the students, has been realized, and the inconvenience and loss of time which result when classes have to attend clinics in distant hospitals have thus been greatly reduced.

The Hospital is provided with general medical and surgical wards and a number of private rooms. All patients, however, are at the service of the School for clinical study. A large obstetrical ward and two operating rooms and preparation rooms are furnished with the best equipment. The Dispensary rooms on the ground floor have been increased in number and much improved for their special purposes.

While most of the instruction is given at the bedside or in the Dispensaries to small sections of the class, a large part is offered in the medical and surgical laboratories of the Hospital. Clinical lectures are provided for in the two lecture rooms.

The Hospital has thus been constructed primarily for teaching, and situated so favorably the clinical material is in abundance.

ST. LOUIS MULLANPHY HOSPITAL.

This is the oldest and most widely known general Hospital in the West. Its extensive general and special clinics are conducted by members of this Faculty, and are devoted wholly to the instruction of its students. The use of ten beds has been secured so that students may have bedside instruction here as well as at the Washington University Hospital.

BETHESDA HOSPITAL.

The Bethesda Hospital, with its maternity and foundling departments, is under the direct supervision of Professor E. W. Saunders, and is accessible to the senior students of the School only. Opportunity is here afforded for exercises in obstetrical diagnosis, and in acquiring practical experience in midwifery. At the Foundling Hospital the student is made familiar with infantile diseases and artificial feeding.

DISPENSARY.

The O'Fallon Dispensary is a special clinical department of the School with general medical and surgical clinics and the various special clinics fully represented.

An obstetrical out-clinic attached to the Dispensary affords the senior students special opportunities for practical work in this important branch of medicine.

At the City Hospital, the Female Hospital, the Insane Asylum, and the Poor House, the Medical Department stands on equal terms with others in the privilege of visiting and clinical instruction.

The attention of students is called to the fact that a corps of assistant physicians to the various municipal

hospitals is appointed each year after competitive examination, to which all members of the graduating class are eligible.

We beg to direct attention to the fact that hitherto four-fifths of the positions in the city hospitals have been filled by the graduates of the St. Louis and Missouri Medical Colleges.

REQUIREMENTS FOR ADMISSION.

Candidates for admission to the Medical Department will be received upon the following conditions:—

1. A satisfactory certificate of good moral standing.
2. *Admission by Diploma.* Any candidate who has received a degree in Arts or Science from a College or University recognized by this department, will be admitted without examination.

Diplomas of Public High Schools, Academies, with a four years' course, also of State Normal Schools having a course equivalent to a four years' High School course, are accepted as complete certificates. Diplomas must be presented by candidates to the Registrar on the date of matriculation.

Any candidate who shall present written evidence of having passed the entrance examinations of a recognized College or University, in which the requirements are equivalent to those demanded for entrance to this Department, will be admitted without examination.

3. *Admission by Examination.* Candidates for admission to the first year class of the Medical Department, who do not possess the foregoing qualifications, will be required to pass examinations in the following subjects:—

English, A and B.
Mathematics, A and B.
Latin, A and B.
History, A and B.

In addition to these subjects the candidate must present himself for examination in five subjects, which he may choose from the following:—

English, C.
Mathematics, C.
Mathematics, D.
Mathematics, E.
Latin, C.
Latin, D.
Greek, A.
Greek, B.
Greek, C.
German, A and B.
French, A and B.
Physics.
Chemistry.
Botany and Zoölogy.

ENGLISH.

No candidate will be accepted in English whose work is notably defective in spelling and punctuation.

A. (1) Grammar.

(2) Composition.—A short essay, correct in spelling, punctuation, grammar and division of paragraphs, written on a subject to be announced at the time of the examination.

B. The candidate must present evidence of a general knowledge of the following works and their authors: Shakespeare's Merchant of Venice; Pope's Homer's Iliad (four books); Goldsmith's Vicar of Wakefield; Coleridge's The Rime of the Ancient Mariner; Tennyson's The Princess; Scott's Ivanhoe; Lowell's The Vision of Sir Launfal; Cooper's The Last of the Mohicans.

- C. The candidate must present evidence of a special knowledge of the form and structure of the following works: Shakespeare's *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro* and *Il Penseroso*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

MATHEMATICS.

- A. *Algebra*, including reduction of fractions, solution of simple equations with one, and with two or more unknowns, the Theory of Exponents, the Theory of Radicals and Proportion.
- B. *Geometry, Plane*, with exercises (as in Wells, Wentworth or Phillips and Fisher).
- C. *Geometry, Solid*, with numerical exercises (as above).
- D. *Trigonometry, Plane*. (Wells, Wentworth, Phillips and Strong.)
- E. *Algebra, advanced*, beginning with Quadratic Equations through the college text. (Wells or Wentworth.)

LATIN.

- A. *Grammar*. (1) Inflection and derivation of words. Syntax, with writing simple Latin prose.
- B. *Caesar*:
Latin prose translation will be based on Caesar's *Gallie Wars*. Books I, II, III, IV.
- C. *Cicero*:
Translation at sight of passages taken at large from Cicero's speeches.
- D. *Virgil*. Ovid's *Metamorphosis* or from prose and verse of no greater difficulty.

GREEK.

- A. *Grammar*. Xenophon's *Anabasis*, Books I and II, will be the basis of this examination, which will consist of the common forms and construction, and simple sentences turned into Greek or English.

- B. *Homer*. Iliad, Books I and II, with questions on forms and construction.
- C. *Herodotus*. Questions on forms and construction.

HISTORY.

- A. (1) United States History. Fiske or equivalent.
(2) Civics; origin and development of our institutions.
- B. English History; or
Greek History and Roman History.

GERMAN.

- A. *Grammar*. The declension of nouns, articles, adjectives, pronouns; conjugation of strong and weak verbs. The test will consist in part of direct grammatical questions, and in part of translation of simple English into German.
- B. *Literature*. Translation at sight of easy German Prose selected from three representative nineteenth century writers.

FRENCH.

- A. *Grammar*. The conjugation of regular verbs and of the more frequently occurring irregular verbs; forms and positions of the various pronouns and adjectives, inflections of nouns and adjectives. This will be tested by the translation into French of a short connected passage.
- B. *Literature*. Sight translation, and ability to render into good English a passage of nineteenth century prose.

PHYSICS.

The test involves a consideration of the elementary principles of Mechanics, Sound, Light, Heat, Electricity and Magnetism, as presented in the text of Carhart and Chute, Avery or Gage.

CHEMISTRY.

A knowledge of Remsen's Elements of Chemistry or its equivalent is required.

BOTANY AND ZOÖLOGY.

Botany; the equivalent of the work of one year in the St. Louis High Schools.

Zoölogy; the equivalent of the work of one year in the St. Louis High Schools.

These examinations will be conducted by examiners appointed by the Chancellor of Washington University.

Inasmuch as the requirements preliminary to the study of medicine and to the registration of physicians vary somewhat in the different States, it is particularly enjoined upon students to conform in all respects to the special regulations governing admission to medical practice in the State in which they intend to reside.

Students from undergraduate colleges who desire credit in inorganic and organic chemistry and histology must show certificates of the time spent in these branches and further must pass examinations in each one for which credit is sought.

Graduates in pharmacy from institutions having membership in the American Conference of Pharmaceutical Faculties will be given credit for their work in materia medica and pharmacy.

THE ADMISSION OF STUDENTS FROM OTHER ACCREDITED MEDICAL COLLEGES.

ADMISSION TO ADVANCED STANDING.

Applicants for admission to advanced standing must furnish evidence (1) that the foregoing terms of admission in regard to preliminary training have been ful-

filled, (2) that courses equivalent in kind and amount to those given in this school, in the year or years preceding that to which admission is desired, have been satisfactorily completed, and (3) they must pass examinations at the beginning of the session in October* in all the subjects that have been already pursued by the class to which admission is sought. Certificates of standing elsewhere cannot be accepted in place of these examinations. The applicant must have studied as a matriculated medical student in an approved medical school for a period of time at least equal to that already spent by the class which he seeks to enter.

Graduates of other medical schools who are permitted to enter this School with advanced standing as candidates for the degree are required (a) to pay the fees charged for the years in which they are in attendance, (b) to fulfill the requirements for graduation, as stated in this announcement, and (c) to pass satisfactory examinations in anatomy, chemistry, physiology and pathology.

Arrangements have been made with the Faculty of the Undergraduate Department of Washington University whereby students in that department intending to enter the Medical School may elect in their A. B. course certain branches of the medical course. These subjects must be taken in the Medical School and the students will receive credit both in their A. B. and in their M. D. courses for the grades assigned to them. By this means the time required for obtaining the two degrees may be shortened.

In this connection attention is called to the following courses which are offered to students in the Undergraduate Department of Washington University:—

Cytological Technique in the Shaw School of Botany.

*See Calendar: Admission to Advanced Standing.

Zoölogy 1 and 2: Biology, a combination of the elementary courses in zoölogy and botany designed to give students a broad one year's course in biology without specializing in either subject.

Zoölogy 3 and 4: Comparative anatomy and embryology of vertebrates.

Although work in this line cannot be accepted as the equivalent of any subject in the Medical School, students of the Undergraduate Department, who intend to study medicine, are advised to take it as preparatory to the medical course.

GRADUATE AND SPECIAL COURSES.

The frequent requests for opportunity for special clinical work on the part of graduates have led the Faculty to provide for such cases for several years past and at present the school offers excellent advantages in this line of study, as a result of which the number of graduate students is now large.

Physicians, graduates of an accredited regular school of medicine, are admitted to any of the courses of instruction given in the Medical Department, subject to such restrictions as may grow out of the assignment of hours in the programmes of work laid out for the several classes; and, further, to the single restriction that, in the case of those desirous of taking advanced laboratory work, such proficiency in elementary work, as may be necessary for its successful prosecution, will be required. A certificate of actual attendance will be given upon request.

GENERAL STATEMENT OF THE PLAN OF INSTRUCTION.

The course of medical study extends over a period of four years of eight months each.

The curriculum is based on the amount and kind of work required of the candidate for the Degree of Doctor of Medicine. The courses are graded in such a manner that all the fundamental studies and general subjects must be taken before special courses and advanced work may be pursued. Of the latter a large part is elective, in order that the student may enjoy some liberty in the pursuit of higher studies and specialties.

The work required for the degree consists of obligatory courses, no account being taken of elective studies in the School records. Throughout the four years the classes are instructed separately in the clinics and laboratories as well as in the lecture rooms. Sectional teaching and individual instruction form part of the required work of the third and fourth years.

Instruction by the practical methods of the laboratory, post-mortem room, day clinic and bedside take up about half the time of the whole course, the other half being given over to the conferences, recitations, informal talks and lectures as a means for aiding the student in systematizing and remembering the principles of medicine.

In the first year the work is limited to chemistry and anatomy. Nearly all of the time is spent in the laboratories in the study of inorganic chemistry, embryology, histology and gross and microscopical anatomy.

The work of the second year consists in a continuance of anatomical studies, physiology, organic and

physiological chemistry, pathology and bacteriology. The study of these branches is carried on almost entirely in the laboratory. In the second year the courses in materia medica and pharmacy and in therapeutics are introduced, and in the latter half the class begins the study of the normal physical signs.

General medicine and surgery naturally comprise the principal subjects of the last two years.

Medicine, surgery and obstetrics, begun in the third year, are each subdivided into graded courses. The principles of physical diagnosis are presented to the student in the medical and surgical clinics and in a well organized laboratory course of clinical chemistry and microscopy. Hygiene and sanitary science and some of the specialties are also introduced into this period of the course, such as diseases of children, neurology and ophthalmology which are taught clinically and didactically, and lecture courses on the eruptive fevers, otology and gynecology in the last half of the year.

The studies of the fourth year are carried on mainly by sectional work in the clinics and at the bedside. Students are drilled in making diagnoses and in prescribing treatment. Cases attended during the week by certain students are discussed by the class. Each senior student is required to attend several obstetrical cases and to make obstetrical diagnoses at the Bethesda Maternity Hospital, and Obstetrical Out-Clinic. Forensic medicine and sectional work in the special clinics are included in the work of the last year.

In order to regulate the students' work and to ascertain the results of the teaching, examinations are held regularly at stated periods (see Calendar). *Good scholarship, which includes regular attendance and satisfactory work, is insisted upon and required of all students who expect to remain in the School for the degree.*

ELECTIVE COURSES.

Opportunity for the pursuit of elective work is afforded in nearly every branch represented in the third and fourth years of the curriculum, and moreover students of the last two years are permitted to undertake advanced work in the subjects of the first four semesters.

No record will be kept of work elected and such courses shall not count toward the degree. In selecting these studies, students must so arrange that no conflict with prescribed work shall occur.

Instructors in charge of elective courses will post notices of the semesters, days and hours when the work is to be conducted.

REQUIREMENTS FOR GRADUATION.

1. The candidate must be twenty-one years of age.
2. He must be of good moral character (which includes unexceptionable conduct while at this School).
3. He must have filled the requirements for entrance.
4. He must have attended not less than four annual courses of medical instruction as a regularly matriculated medical student, the last of which must have been in this School.
5. He must, by the first of April, have notified the Dean, in writing, of his intention to present himself as a candidate for the degree.
6. He must have discharged all indebtedness to the School.
7. He must have taken all obligatory courses offered here, or their equivalent, and have done satisfactory work in all of them.

At the end of the Fourth Year every student, who has fulfilled these requirements, will be recommended for the degree of Doctor of Medicine.

PRIZES.

Two "GEORGE F. GILL Prizes" are offered to the students of the School, viz. :—

1. One prize of fifty dollars to be awarded at the end of the First Year to the member of the class who shall have made the highest grade in anatomical work assigned to the First Year class.

At the discretion of the Professor of Anatomy other students of the First Year who shall have done excellent work in Anatomy may be awarded "Honorable Mention" at Commencement. The names of those students thus chosen will be printed in the Announcement.

2. One prize of fifty dollars to be awarded to a member of the graduating class, of high general standing, who shall have done specially good work in the department of Diseases of Children.

3. A CURTMAN prize will be awarded at the end of the First Year to the member of the class who shall have made the highest grade in Chemistry.

At the discretion of the Professor of Chemistry other students of the First Year who shall have done excellent work in Chemistry may be awarded "Honorable Mention" at Commencement. The names of those students thus chosen will be printed in the Announcement.

SCHOLARSHIPS.

1. The GEORGE F. GILL SCHOLARSHIP, instituted in memory of the late Dr. George F. Gill, Clinical Professor of Diseases of Children, entitles the holder to one year's free tuition.

ASSISTANTSHIPS.

From ten to twelve positions as laboratory assistants in the courses in Chemistry, Anatomy, Histology, Pathology, Bacteriology and Pharmacy are awarded to students of high standing who have been in attendance for more than one year. The salary attached to these positions is never more than fifty dollars for each session and is dependent upon the amount of work required of the student.

FEES AND EXPENSES.

TUITION.

All fees and charges are payable at the office of the Registrar. All checks should be made payable to the order of H. N. Spencer, Treasurer.

Each student, before he can register, will be charged a matriculation fee of five dollars, which is payable but once during the course of four years. In addition an annual tuition fee of one hundred dollars will be charged, and this is payable at the beginning of each session.

If at the end of the session a student shall have left unpaid any portion of his tuition fee, or other expenses he may have incurred, he will not be considered in good standing. In case he is a candidate for the degree, he will not be admitted to the final examinations; or, if he is a member of one of the three lower classes, his grades will be withheld and no certificate of attendance will be issued to him until he shall have discharged his indebtedness to the School.

When a student enters the School and pays the required fees, it is taken for granted that he has given

the matter due consideration, and that he is prepared to pursue the course of study prescribed. The Faculty stands ready to perform its part of the work as laid down in the curriculum. For these reasons fees once paid by students cannot for any cause whatsoever be refunded nor transferred. A student, however, who has paid his tuition fee and for good reason is unable to complete the session, will be given credit for the amount, and upon his return to the School at some subsequent time, he will not be required to pay the same fee a second time.

LABORATORY FEES AND OTHER CHARGES.

At the beginning of the session special fees are charged to cover the cost of materials and apparatus used in the laboratories. No portion of these fees is refunded. Students are further required to make good any loss resulting from damage or breakage of apparatus. Students must supply their own padlocks for the lockers provided for clothing and apparatus and the School will not assume responsibility for any loss of property.

No fees will be charged for demonstrators' or hospital tickets or for graduation.

Each student in the first three years is required to pay to the Registrar of the College a fee each year to cover breakage in the laboratories: in the first year, ten (\$10.00) dollars; in the second and third years, five (\$5.00) dollars. This sum, less the amount charged against it for breakage, will be returned to him at the end of each year.

Tickets must be taken out and paid for at the beginning of the session.

FIRST YEAR.

CHEMICAL LABORATORY. A laboratory fee of five dollars will be charged in General Chemistry and Qualitative Analysis. The average additional charge for breakage is about three dollars.

DISSECTING ROOM. A fee of five dollars will be charged for the use of anatomical material issued for dissection.

MICROSCOPICAL LABORATORY. A fee of five dollars will be charged for the use of a microscope and for material supplied in Histology and Organology. A student will be held responsible for damage to his microscope, or for loss of parts and will be expected to pay the cost. A student using his own microscope will be charged only three dollars.

EMBRYOLOGICAL LABORATORY. A fee of two dollars and a half will be charged to cover the cost of material.

An annual rental fee of twenty-five cents will be charged for a locker.

SECOND YEAR.

CHEMICAL LABORATORY. A laboratory fee of five dollars will be charged in Physiological Chemistry. The average additional charge for breakage is about one dollar.

ANATOMICAL LABORATORY. A fee of two dollars and a half will be charged for the use of material.

PHYSIOLOGICAL LABORATORY. A fee of five dollars will be charged to cover the cost of material used.

PATHOLOGICAL LABORATORY. A fee of five dollars will be charged for the use of a microscope and for material supplied in Pathology and Bacteriology.

PHARMACEUTICAL LABORATORY. A fee of one dollar will be charged for laboratory work in Pharmacy. An additional charge will be made for breakage.

THIRD YEAR.

CHEMICAL LABORATORY. A laboratory fee of five dollars will be charged in Urinology and for the use of a microscope in Microscopical Diagnosis. An additional charge will be made for breakage.

FEES OF ALUMNI, GRADUATES OF OTHER MEDICAL SCHOOLS, AND SPECIAL STUDENTS.

Graduates of the Saint Louis Medical College, of the Missouri Medical College and of the Medical Department of Washington University have a perpetual free admission. This privilege entitles the holder to attend all lectures and clinics. Should he wish to take any course in which laboratory work is given, he will be charged the specified fee.

Graduates of other medical schools will be charged the matriculation fee of five dollars, and a tuition fee of twenty-five dollars for attendance during a session or for any part of a session. For all courses in which laboratory work is given the specified fees will be charged in addition.

Students who may wish to take special courses of study not covered by any of the above clauses, are requested to make written application to the Dean, stating plainly the nature of the work they wish to do and the length of time they expect to be in attendance.

SUMMARY OF EXPENSES FOR THE FOUR YEARS' COURSE.

The actual fees charged for each year's attendance at the school are as follows:—

	First Year.	Second Year.	Third Year.	Fourth Year.
Matriculation	\$ 5 00	\$.....	\$.....	\$.....
Tuition	100 00	100 00	100 00	100 00
Chemistry	5 00	5 00	5 00	.....
Breakage (estimated)..	3 50	1 50	1 00	.....
Anatomy	5 00	2 50	.....	.....
Histology	5 00	.....	.....	.....
Embryology	2 50	.....	.....	.....
Physiology .....	.....	5 00	.....	.....
Pharmacy .....	.....	1 00	.....	.....
Pathology .....	.....	5 00	.....	.....
Locker	25	25	25	25
Total	\$126 25	\$120 25	\$106 25	\$100 25

Thus for residence in St. Louis during four annual sessions of thirty-five weeks each and for attendance at the Medical Department, exclusive of the cost of instruments, clothing, amusements and incidentals, a conservative estimate would be:—

	First Year.	Second Year.	Third Year.	Fourth Year.
School	\$126 25	\$120 25	\$106 25	\$100 25
Books	25 00	25 00	25 00	25 00
Room rent.....	52 50	52 50	52 50	52 50
Board	122 50	122 50	122 50	122 50
Total	\$326 25	\$320 25	\$306 25	\$300 25

FIRST YEAR CLASS.

NAMES.	ADDRESS.
Abaza, Sayid Bahgat	Zagazig, Egypt.
Barry, James J.	St. Louis, Mo.
Bechtold, Frederick William	Bellaire, Mich.
Baillock, Samuel	St. Louis, Mo.
Black, Grover Cleveland	Rushville, Ill.
Blackard, William James	Ridgway, Ill.
Bollinger, Oscar Walter	Steeltville, Ill.
Brand, Eli Thomas.	Bonne Terre, Mo.
Briggs, Guy Young	St. Louis, Mo.
Burdick, Jesse Jerome	Roodhouse, Ill.
Catto, William Bruce	Decatur, Ill.
Chapman, William Day	White Hall, Ill.
Davis, Frank L.	Pawnee, Ill.
Dew, Walter Albert	Belleville, Ill.
DuBois, Henry Harry Slaton	Greensboro, Ala.
Duey, Delmar Roy	Winfield, Mo.
Duncan, George Washington	Iberia, Mo.
English, Milton Tate	Paris, Mo.
Ewerhardt, Frank Henry	St. Louis, Mo.
Feinstein, Leon Aaron	St. Louis, Mo.
Goodpasture, Lloyd E.	Viriden, Ill.
Gore, Victor Maurice	Carlinsville, Ill.
Gossard, Gary Thomas	Golconda, Ill.
Guerrero, Alfred A. B.	St. Louis, Mo.
Gundelach, Charles Armin	St. Louis, Mo.
Hardy, Bert Witham	Griggsville, Ill.
Hays, George Renwick	Houston, Ill.
Helmy, Daud	Alexandria, Egypt.
Hempelmann, Theodore Carl	St. Louis, Mo.
Herskovitz, Samuel	St. Louis, Mo.
Hewitt, Walter Roy	St. Louis, Mo.
Hill, Halbert Rowland	Fulton, Mo.
Hobson, Abraham Dana	Fayette, Mo.
Hurford, Phelps Grant	Pueblo, Colo.
Kesl, George Matthew	St. Louis, Mo.
Klocke, Frank W.	St. Louis, Mo.

NAMES.	ADDRESS.
Long, James Franklin	Hannibal, Mo.
Lozi, Abdel Rahman	Damietta, Egypt.
McCoy, Gurley C.	Lake, Ind.
Mills, James F.	Chicago, Ill.
Olds, Wilson Albert	Medical Lake, Wash.
Raeder, Oscar Jacobus	St. Louis, Mo.
Rich, Harry	St. Louis, Mo.
Roeslin, Fred. Leo	Oakland, Mo.
Sandperl, Harry	St. Louis, Mo.
Shaw, Albert Rodney	Louisiana, Mo.
Sheets, John S.	Owen, Mo.
Simmons, Morris Samuel	Jerseyville, Ill.
Smith, Henry Joseph, A.B.	Wendelin, Ill.
Stiehl, Elmer Phillip	Belleville, Ill.
Stone, Charles Allen, B.Sc.	Shipman, Ill.
Sturgis, Walter E.	Kennett, Mo.
Tilles, Randall Solon	South McAlester, I.T.
Viley, Leland Peak, A.B.	Marshall, Mo.
Westermeyer, George Washington	Carlinville, Ill.
Young, Henry McClure, A.B.	St. Louis, Mo.
Zaki, Yousef	Zagazig, Egypt.
Total, 58.	

SECOND YEAR CLASS.

Bartels, Leo George	Cape Girardeau, Mo.
Bowles, John Anderson	Lanes Prairie, Mo.
Brandt, Benjamin	Cappeln, Mo.
Clark, Hiram Jackson	Richmond, Mo.
Cordonnier, Louis Joseph	East St. Louis, Ill.
Courtright, John Leslie	Yakima City, Wash.
DeLong, William Allen	Batchtown, Ill.
Dixon, Charles Hall	Wichita, Kan.
El-Gazelle, Raddad Shehdan	Beirut, Syria.
Farrar, Charles B.	Marquand, Mo.
Freels, Arthur McDonald	East St. Louis, Ill.

NAMES.	ADDRESS.
Fronske, Martin George	St. Louis, Mo.
Gipson, Emmett Herbert	Lagonda, Mo.
Gray, Robert Quincy	California, Mo.
Hill, Lawrence Henry	Paragould, Ark.
Jackson, Frank F.	Stratberry, Ont., Can.
Jameson, Charles Howard	St. Louis, Mo.
Jones, Walter Matthews	Brookfield, Mo.
Kerwin, William	Graniteville, Mo.
Kluegel, William	St. Louis, Mo.
Lemmon, George Bruce, B.S.D.	Warrensburg, Mo.
Lewis, Harry Overton	Iuka, Ill.
Liston, Joseph Burt	Carlinville, Ill.
Luckey, Frank Seymour	Festus, Mo.
Ludwigs, Gustav Anton John	East St. Louis, Ill.
Lund, Herlup Gyde	Sora, Denmark.
MacLean, S. M.	Tacoma, Wash.
McCubbin, James Burlington	Laddonia, Mo.
Merwin, Edgar	Edwardsville, Ill.
Middlebrooks, George Fred	Hope, Ark.
Monroe, Lee Elsworth	Eureka, Mo.
Newman, Percy	St. Louis, Mo.
O'Reilly, William	Alsey, Ill.
Patterson, Jacob Bruce, A.B.	Orangeville, Pa.
Peacock, Burton Earl	Moline, Ill.
Poston, Harry Prewitt	Bonne Terre, Mo.
Prichard, James Eugene	Aurora, Ill.
Ragland, Dallas Case	Springfield, Ill.
Reinhardt, Gustav	St. Louis, Mo.
Reinhardt, Oscar F.	New Baden, Ill.
Rich, William Lafayette	Paris, Idaho.
Robinson, Leonard Hughes	Warrensburg, Mo.
Royston, Grandison Delaney	Washington, Ark.
Sale, Llewellyn	St. Louis, Mo.
Schweninger, Edward Alexander, Ph.G.	St. Louis, Mo.
Shadid, Michael	Beirut, Syria.
Simpson, Joseph Hilary	Tipton, Mo.
Skaggs, Charles S.	Hamsburg, Ill.

NAMES.	ADDRESS.
Sparling, Arthur Marion	Sailor Springs, Ill.
Spivy, Raymond Mills	Henderson, Tex.
Story, James Goree	Harrison, Ark.
Sutter, John Ritter	Edwardsville, Ill.
Tillmanns, Charles Samuel	
Jonathan	St. Charles, Mo.
Urban, Robert Oliver	Louisiana, Mo.
Vinyard, Paul	Jackson, Mo.
	Total, 55.

THIRD YEAR CLASS.

Bell, Robert Hamilton	Carlinville, Ill.
Bird, James B.	Mason City, Ill.
Bodine, Rufus Howard	Paris, Mo.
Boren, Albert James	Liberty, Ill.
Bowman, John Clark	Sturgeon, Mo.
Cantrell, Ira Jones	Kansas City, Mo.
Clark, Edward Spencer, A.B.	Warrensburg, Mo.
Cockrell, Eugene Peyton, Ph.G.	Lamar, Mo.
Colvert, George Washington	Vandalia, Mo.
Dames, Alphonse Ferdinand	St. Paul, Mo.
DuMars, Elliot Callender	Peoria, Ill.
Duncan, Fred Wallace	Marshall, Mo.
Ellery, William Linton	LaGrange, Mo.
Engleman, Oscar R.	Cape Girardeau, Mo.
Englert, Victor I., Ph.G.	St. Louis, Mo.
Esselbruegge, Fred C.	St. Louis, Mo.
Evers, Emile T.	St. Louis, Mo.
Gallagher, John Francis	O'Neil, Neb.
Gardner, Charles Campbell	Lehigh, I. T.
Glaser, Martin Joseph, Ph.G.	Ste. Genevieve, Mo.
Gray, John Worth	Hickory Valley, Ark.
Gundlach, Arthur	St. Louis, Mo.
Harrell, Henry Jackson	Springfield, Mo.
Hayes, Karl Lovell	Pleasant Plains, Ill.
Henske, Andrew C., A.B.	St. Louis, Mo.
Hyndman, Charles Elihu	Sparta, Ill.

NAMES.	ADDRESS.
Jones, Edward Baxter	Jacksonville, Tex.
Khourri, Mitri Flad	Beirut, Syria.
Kirby, Henry Hodgen	Harrison, Ark.
Knott, Albert William	Westville, Mo.
Lawler, Thomas Augustus	Rushville, Ill.
Leslie, Walter Logan	Russellville, Mo.
Lipsitz, Samuel	Dallas, Tex.
Martin, Samuel P.	E. Prairie, Mo.
McPheeters, Samuel Brown, A.B.	St. Louis, Mo.
Mercer, Ray	Liberty, Ill.
Nichols, Arthur A.	Fargo, N. D.
Parker, Harry Field	Warrensburg, Mo.
Peters, Augustus William, Ph.G.	Brenham, Tex.
Pitzman, Marsh, A.B.	St. Louis, Mo.
Pope, Boyd Henderson	Winfield, Kan.
Ratcliff, Ernest, Jr.	St. Louis, Mo.
Roe, Thomas Hamilton	Pinckneyville, Ill.
Ross, Jno. Fredrick	Littleton, Ill.
Schulenburg, August Carl	Lichterburg, Transvaal, S. A.
Smith, William Hope	Mineola, Tex.
Sullivan, Francis Joseph. A.B., A.M.	St. Louis, Mo.
Trible, George Barnett	Piasa, Ill.
Wahl, Eugene, Jr.	Edwardsville, Ill.
Wallis, Marshall, B.Sc.	Lebanon, Ill.
Weber, Peter John, Ph.G.	St. Louis, Mo.
Weir, Marshall Webster	Belleville, Ill.
Weiss, Wm.	St. Louis, Mo.
Zelle, Fredrick Francis, A.B.	St. Louis, Mo.

Total, 54.

FOURTH YEAR CLASS.

Alexander, Robert DuBose, A.B.	Oak Ridge, La.
Ambrister, Joseph Campbell	Norman, Okla.
Anderson, Orville Bradley	Keytesville, Mo.

NAMES.	ADDRESS.
Beeson, John Pierce	Noel, Mo.
Betts, Clarence Earnest	Hammond, Ill.
Brewster, Bert Marion	Macedonia, Mo.
Bribach, Eugene John	St. Louis, Mo.
Brossard, Pierre Mayerle	Kirkwood, Mo.
Chalkley, A. Judson, A.M.	Big Stone Gap, Va.
Cline, Harry Xenophon	Marion, Ill.
Cook, Jerome Epstein	St. Louis, Mo.
Doron, Paul Rimer	Harrisonville, Mo.
Fildes, Vernon Silvester	Louisville, Ill.
Fischel, Walter, A.B.	St. Louis, Mo.
Goodman, Dan Carson	Springfield, Ill.
Gregg, Arthur Mitchell	Joplin, Mo.
Griffith, Harry Melvin, Ph.B.	Mount Ayr, Iowa.
Guggenheim, Louis Kaufman	St. Louis, Mo.
Hale, Jesse Wilburt	St. Louis, Mo.
Hamilton, Buford Garvin	Fargo, N. D.
Hastings, James Barnard	Upper Alton, Ill.
Hawkins, George Giles	Paris, Mo.
Hayward, Joseph William	Paris, Idaho.
Hirsh, Albert	Girard, Ill.
Hooss, Charles Henry Albert	Perryville, Mo.
Huelesmann, Leo C., A.B.	St. Louis, Mo.
Jacobs, Max William, A.B.	St. Louis, Mo.
James, Jasper Milton	Sellers, Ill.
Kern, Bert Chamberlain	Colorado Springs, Colo.
Klenk, Charles Leonard	St. Louis, Mo.
Knewitz, Otto W.	New Athens, Ill.
Kress, Clarence Cameron	St. Louis, Mo.
Lane, George Garfield	Rich Hill, Mo.
Lightner, Oscar Newton	Wichita, Kan.
Lincoln, Harry F., Jr.	Kirksville, Mo.
Lumley, Zoda D.	Kampsville, Ill.
McAmis, Leon Clifford, Ph.B.	St. Louis, Mo.
McKnelly, Charles Everett, A.B.	Bible Grove, Ill.
McMillan, Paul Duncan	Maryville, Mo.
McMurdo, William Wilford	Marissa, Ill.
McNutt, James Carson, A.B.	Hammond, Ill.
Minton, William Henry	Fortescue, Mo.

NAMES.	ADDRESS.
Moore, Sherwood	Lynchburg, Va.
Nalley, Thomas J., Jr.	Louisiana, Mo.
Nettles, Frank Henry, Ph.G.	Cape Girardeau, Mo.
Nuss, Oscar William	Louisville, Ky.
Park, George Matthew	St. Louis, Mo.
Riess, John Turk	Red Bud, Ill.
Schlernitzauer, Robert A.	Millstadt, Ill.
Senseney, Eugene Towner, A.B.	St. Louis, Mo.
Sheahan, Edwin L.	St. Louis, Mo.
Shields, Daniel Francis	Carrollton, Mo.
Smith, Seth Paine	St. Louis, Mo.
Strode, Robert Caldwell	New London, Mo.
Thomas, Earl	Denver, Colo.
Thompson, Henry Herbert, B.Sc., A.M.	Nashville, Ill.
Van Meter, Eugene R.	Elkhart, Ill.
Vonnahme, Conrad Benedict	East St. Louis, Ill.
Weisert, Charles	St. Louis, Mo.
Wilson, Elisha Hall Gregory	Cape Girardeau, Mo.
Wilson, Robert Manton	Columbus, Ark.
Wobus, Reinhard E.	Quincy, Ill.
Wright, Chauncey Goodrich, B.Sc.	Oberlin, Ohio.
Zell, Augustine M.	St. Louis, Mo.

Total, 64.

GRADUATES, 1904.

The Annual Commencement was held on Thursday, May 19, 1904, when Dr. WJ McGee delivered an address to the Graduating Class, and the Chancellor of the University conferred the Degree of Doctor of Medicine upon the following gentlemen, viz. :—

NAME.	ADDRESS.
Austin, Adelbert Morton	Mendon, Ill.
Bader, George Washington, Ph.G.	Belleville, Ill.
Baldwin, Paul	Kennett, Mo.
Ball, Cleo Cleveland	Ravenden, Ark.
Ball, James Edwin, Jr.	Richmond, Mo.
Beall, Homer E.	Malden, Mo.
Beckert, John Henry, A.B.	St. Louis, Mo.
Bolton, John Frederick, A.B.	Eureka Springs, Ark.
Brandt, Frederick Arnold	St. Louis, Mo.
Brown, Anderson Fletcher	Malta Bend, Mo.
Brownfield, Samuel Tilden	Richmond, Mo.
Calhoun, Delane Stow	Sumpter, La.
Cannon, Harry	Cresco, Iowa.
Chapman, Richard Augustus	Liverpool, England.
Clapper, William Louis	Unionville, Mo.
Conway, William Quarles	Lamont, Mo.
DeMenil, Henry Nicholas	St. Louis, Mo.
Dickerson, Harry William	Indianapolis, Ind.
Eastman, Claude Washington	Pullman, Wash.
Evans, John Lillie	Washington, Ind.
Feuerborn, Henry Rudolph	St. Louis, Mo.
Fink, Frank Clarence	Pleasant Plains, Ill.
Freund, Newton Marion	St. Louis, Mo.
Friedeberg, Arthur Hugo, Ph.G.	St. Louis, Mo.
Fujimori, Naokazu, M.D.	Tokyo, Japan.
Fuller, Allen Garfield	St. Louis, Mo.
Garstang, Donald Bule	St. Louis, Mo.
Gauen, George Otto	Waterloo, Ill.

NAMES.	ADDRESS.
Griffin, Fred	Nokomis, Ill.
Hope, Daniel Howard	Shawneetown, Mo.
Horwitz, Alexander Earle, A.B.	St. Louis, Mo.
Hudson, John Rodgers, Ph.B., M.D.	St. Louis, Mo.
Jones, Harry Lander, A.B.	Blaser, Mo.
Keithley, Chiles Lester, A.B.	Cincinnati, Mo.
Keller, Jacob Molior	Steelville, Ill.
Kilpatrick, George Alexander	Wilburton, I. T.
Kirby, Franklin Beverly, A.B.	Harrison, Ark.
Koenig, George Washington	St. Louis, Mo.
Kroeger, George Baldwin	St. Louis, Mo.
LeBlen, Ernest Albert, Ph.G.	Lincoln, Kan.
Lenz, Herman John	Eau Claire, Wis.
Lester, Rollo Bertell	Valle Mines, Mo.
Lischer, Robert Franklin	Mascoutah, Ill.
Long, Frank Leo	DeSoto, Mo.
Maloy, Earl Dee	Lometa, Tex.
Marnell, Frank Sterling	Nebraska City, Neb.
Martin, John Galbraith	Hughesville, Mo.
Mayes, Earle Garfield	Illiopoli, Ill.
Mayes, Joseph Frank, Ph.B.	Pryor Creek, I. T.
Monday, Lewis Robert	Stoutland, Mo.
Nolan, John Alonzo	Millstadt, Ill.
Rohlfing, Arthur Hermann	St. Louis, Mo.
Scholz, Roy Philip	St. Louis, Mo.
Shahan, William Ewing, A.B.	St. Louis, Mo.
Singer, Jacob Jess	St. Louis, Mo.
Snodgras, Charles Alvin	St. Louis, Mo.
Stayner, Ira Clarence	Spencerville, Ohio.
Terry, Harry Alfred	Prophetstown, Ill.
Tooker, Charles William, Jr.	St. Louis, Mo.
Weber, Frank Joseph	Olney, Ill.
Whaley, Roy Wallace	Browning, Mo.
Wolter, Otto Leonard	Otter Tail, Minn.
Woodbridge, Jahleel Hamner	Marshall, Mo.
Yerkes, Lathy Leverett	Upper Alton, Ill.

POST-GRADUATE STUDENTS.

- Butler, John, M.D. St. Louis, Mo.
Beaumont Hospital Medical College, 1891.
- Calhoun, James Graham, A.B., M.D. St. Louis, Mo.
Medical Dept., Washington University, 1896.
- Fitzgerald, William T. F., M.D. Greenville, Ohio.
Medical Dept., University of Wooster, 1891.
- Greby, William, M.D. East St. Louis, Ill.
Medical Dept., University of Pennsylvania, 1889.
- Gaines, Marion Toulmin, M.D. Toulminville, Ala.
Medical College of Alabama, 1890.
- Hartford, John S., M.D. Colony, Okla.
Kansas City Medical College, 1901.
- Hutton, John Wesley, M.D. Wichita, Kan.
St. Louis Medical College, 1883.
- Junkin, E. A., M.D. Carthage, Mo.
St. Louis Medical College, 1880.
- Mowell, John Wilson, M.D. Olympia, Wash.
Missouri Medical College, 1888.
- Martin, James A., M.D. Richmond, Va.
University of Virginia, 1902.
- Owen, William C., M.D. St. Louis, Mo.
Missouri Medical College, 1889.
- Pinckard, Joseph A., M.D. Atwood, Ill.
Missouri Medical College, 1896.
- Poignee, Frank P., M.D. St. Louis, Mo.
Missouri Medical College, 1890.
- Rose, Henry George, M.D. Lake Geneva, Wis.
Medical Dept., University of Denver, 1896.
- Smith, Ulysses Scott, M.D. St. Louis, Mo.
Medical Dept., Washington University, 1898.
- Swisher, Abraham Z., M.D. Des Moines, Iowa.
College of Physicians and Surgeons, Keokuk, 1896.

Trigg, Joseph Milton, M.D.	Ashland, Mo.
College of Physicians and Surgeons, Keokuk, 1893.	
Van Amburg, John A., M.D.	Bufordsville, Mo.
Missouri Medical College, 1886.	
Veidt, Edward Julius, M.D.	Rockville, Mo.
Missouri Medical College, 1893.	
Williamson, Llewellyn, M.D., Capt.	
and Surg., U. S. A.	St. Louis, Mo.
Missouri Medical College, 1897.	
Yount, William Emanuel, M.D.	Nashville, Tenn.
Medical Dept., Vanderbilt University.	
Total, 22.	

OTHER MATRICULANTS.

Brooks, Theodore Prewitt	St. Louis, Mo.
Brown, James Alexander, D.D.S.,	St. Louis, Mo.
Chrane, Victor	Muselfork, Mo.
Calaway, William Lawrence	Bethesda, Ark.
Fischel, Ellis	St. Louis, Mo.
Mahood, Cecil Stanley	Lakelet, Ont., Can.
Stuttle, Charles P.	Litchfield, Ill.
Washer, Eb.	Kansas City, Mo.
Whittington, William E.	Dinuba, Cal.

Freshman	57
Sophomore	55
Junior	54
Senior	64
Post-Graduate	21
Other Matriculants.....	9
Total.....	260

PRIZES AND HONORS.

GILL PRIZE IN ANATOMY.

Walter Matthews Jones.

HONORABLE MENTION.

Leo George Bartels.

John Leslie Courtright.

Martin George Fronske.

Frank F. Jackson.

George Bruce Lemmon.

Jacob Bruce Patterson.

Dallas Case Ragland.

Paul Vinyard.

GILL PRIZE IN DISEASES OF CHILDREN.

Dr. Jacob Jesse Singer.

CURTMAN PRIZE IN CHEMISTRY.

Walter Matthews Jones.

HONORABLE MENTION.

Martin George Fronske.

Dallas Case Ragland.

Edward Alexander Schweninger.

The following graduates received publicly honorable mention for general excellence in the work of the four years' course:—

Dr. Adelbert Morton Austin.

Dr. John Lillie Evans.

Dr. Newton M. Freund.

Dr. Arthur Hugo Friedeberg.

Dr. Fred Griffin.

Dr. Franklin Beverly Kirby.

Dr. Rollo Bertell Lester.

Dr. William Ewing Shahan.

Dr. Charles William Tooker.

Dr. Jahleel Hammer Woodbridge.

HOSPITAL APPOINTMENTS.

The graduates of the Medical Department of Washington University are entitled to compete, on equal terms with those of other colleges, for positions on the resident staff of the St. Louis City and Female Hospitals.

Appointments are also made from the graduating class each year to the following hospitals, viz.: Mullanphy, St. Anthony's, Bethesda, Baptist Sanitarium, Insane Asylum and Poor House.

JUNE 1, 1904.

This year thirty positions as internes at the St. Louis City and Female Hospitals were awarded after competitive examination conducted by the Board of Health. Twenty-six graduates of the class of 1904 took the examinations and the following twenty-two have received appointments, viz.:—

Dr. G. W. Bader.
Dr. John H. Beckert.
Dr. S. F. Brownfield.
Dr. W. L. Clapper.
Dr. H. W. Dickerson.
Dr. C. W. Eastman.
Dr. John L. Evans.
Dr. Newton M. Freund.
Dr. John R. Hudson.
Dr. H. L. Jones.
Dr. F. B. Kirby.

Dr. G. W. Koenig.
Dr. G. B. Kroeger.
Dr. H. J. Lenz.
Dr. J. F. Mayes.
Dr. A. H. Rohlfing.
Dr. R. P. Scholz.
Dr. W. E. Shahan.
Dr. J. J. Singer.
Dr. Chas. W. Tooker.
Dr. Otto L. Wolter.
Dr. Jahleel H. Woodbridge.

PROMOTIONS AND OTHER HOSPITAL APPOINTMENTS.

JUNE 1, 1904.

CLASS OF 1902.

Dr. J. M. Pfeiffenburger, Assistant Superintendent Female Hospital.

CLASS OF 1903.

Dr. Carl Althans, Senior Assistant, City Hospital.
Dr. W. N. Hooton, Senior Assistant, City Hospital.
Dr. F. H. Nies, Senior Assistant, City Hospital.
Dr. Jos. Davie, Senior Assistant, Female Hospital.
Dr. Henry Pace, Senior Assistant, Female Hospital.
Dr. M. C. Tuholske, Senior Assistant, Female Hospital.
Dr. H. V. Wilson, Interne, Jewish Hospital.
Dr. Louis Hunker, Interne, Wabash Hospital, Peru, Ind.

CLASS OF 1904.

Dr. William Q. Conway, Interne, St. Luke's Hospital, St. Louis.
Dr. Daniel H. Hope, Interne, St. Luke's Hospital, St. Louis.
Dr. Donald B. Garstang, Interne, Mullanphy Hospital, St. Louis.
Dr. Harry Cannon, Interne, St. Josephine Hospital, Minneapolis, Minn.
Dr. Alexander E. Horwitz, Interne, St. Louis Female Hospital, St. Louis.
Dr. John G. Martin, Interne, Baptist Sanitarium, St. Louis.
Dr. Harry A. Terry, Interne, Baptist Sanitarium, St. Louis.
Dr. George O. Gauwen, Resident Phys., Maternity Dept., St. Louis.

DENTAL DEPARTMENT
OF
WASHINGTON UNIVERSITY

(MISSOURI DENTAL COLLEGE.)

CALENDAR 1905-1906.

REGULAR ENTRANCE EXAMINATIONS: Friday, September 29, and Saturday, September 30, 1905.

THE FORTIETH ANNUAL SESSION begins October 2, 1905, and continues thirty-two weeks.

CHRISTMAS RECESS: Friday, December 22, 1905, to Tuesday, January 2, 1906.

HOLIDAYS: Thanksgiving Day, Washington's birthday.

COMMENCEMENT about June 2, 1906.

Students on arriving in the city are requested to apply to the Superintendent of the Infirmary for information as to rooms, boarding, etc. Good board at a convenient distance from the College may be obtained at from three to six dollars per week.

Dentists who wish to receive the Annual Announcement regularly, or those who have changed their address, are requested to notify the Secretary of the Faculty.

Students will be registered in the College Building by the Dean.

Any further information may be obtained by addressing or calling upon

J. H. KENNERLY, M. D., D. D. S., Dean,
Twenty-seventh and Locust Streets.

WALTER M. BARTLETT, D. D. S., Secretary,
3894 Washington Avenue.

WASHINGTON UNIVERSITY
DENTAL DEPARTMENT.

MISSOURI DENTAL COLLEGE.

The Missouri Dental College was founded in 1866 by the Missouri State Dental Association, and became the Dental Department of Washington University in 1892.

The purpose of the institution is to educate men to practice dental surgery as a *specialty of medicine*; therefore, the curriculum includes the fundamental branches of medicine, with dental surgery and oral prosthetics.

The Dental Infirmary is open the entire year, and the clinical instruction is in charge of a Superintendent and competent assistants. The City of St. Louis has a population of more than six hundred thousand, from which clinical material for the instruction of students is derived.

The clinic is exceptionally large and affords splendid opportunities for practical work.

The College has the assistance of many practitioners of dentistry in the city, who devote time during each session to illustrating clinical methods of practice. The interest which the members of the profession show in the classes of the College is thoroughly appreciated by the Faculty and students.

The Missouri Dental College is now located in its permanent home on the corner of Beaumont and Locust streets. The entire building has been set apart by the University for the Dental Department, and is being newly fitted throughout with the most modern equipments, and for the term of 1905-6 will be the most up-to-date dental institution in the West. All the instruction will be given in the dental building. Special arrangements have been made for clinical and oral surgery and the lectures in this department will be largely clinical, a new oral surgery amphitheater having been provided for this purpose.

MISSOURI DENTAL COLLEGE.

BOARD OF OVERSEERS.

JOHN HANGER KENNERLY, M.D., D.D.S., *Secretary.*
JAMES B. NEWBY, D.D.S.
GEORGE OLIVER CARPENTER.
ISAAC HENRY LIONBERGER.
SIDNEY PAYNE BUDGETT, M.D.
WALTER MANNY BARTLETT, D.D.S. .
EDWIN HARRISON.

FACULTY.

WINFIELD SCOTT CHAPLIN, LL.D.,
Chancellor of the University.

ELISHA HALL GREGORY, M.D., LL.D.,
*Emeritus Professor of the Principles and Practice of
Surgery.*

ALBERT HOMER FULLER, M.D., D.D.S.,
Emeritus Professor of Operative Dentistry.

JOHN HANGER KENNERLY, M.D., D.D.S., Dean,
Professor of Crown and Bridge Work.

ORION WILLIS BEDELL, M.D., D.M.D.,
*Professor of Operative Dentistry, Embryology and Dental
Histology.*

SIDNEY PAYNE BUDGETT, M.D.,
Professor of Physiology.

ROBERT JAMES TERRY, M.D.,
Professor of Anatomy and Histology.

WILLIAM HOMER WARREN, A.M., Ph.D.,
Professor of Chemistry.

HERMANN PRINZ, B.S., Ph.G., D.D.S., M.D.,
*Professor of Materia Medica, Therapeutics, Bacteriology
and Pathology.*

WALTER MANNY BARTLETT, D.D.S., Secretary,
Professor of Prosthetic Dentistry.

BENNO EDWARD LISCHER, D.M.D.,
Professor of Orthodontia and Dental Anatomy.

WILLARD BARTLETT, A.M., M.D.,
Professor of Oral Surgery.

BLAND NIXON PIPPIN, D.M.D.,
Professor of Metallurgy and Prosthetic Technics.

RICHARD THOMAS BROWNRIGGS, B.S.,
Professor of Dental Jurisprudence.

DEMONSTRATORS.

WILLIAM KNOX AITKEN, D.D.S.,
LE GRAND MARION COX, D.D.S.,
Operative Dentistry.

JESSE DUNCAN WHITE, D.M.D.,
Porcelain Technics.

CHARLES EVERETT KRUPP,
RUDOLPH CHARLES SEIBERT,
Prosthetic Technics.

FREDERICK WILLIAM HORSTMAN,
Operative Technics.

Assistants to the Chair of Anatomy:

VILRAY PAPIN BLAIR, M.D.,
WILLIAM THOMAS COUGHLIN, M.D.,
JAMES ALEXANDER BROWN, D.D.S.,
WALTER HENRY BLANCK.

Chemical Laboratory.

HARRY FRED HAGERMAN,
JOHN MILROY LONERGAN.

**Representative to the National Association of Dental
Faculties:**

JOHN HANGER KENNERLY, Dean.

CLINICAL INSTRUCTORS.

JAMES B. NEWBY, D.D.S.,
THEODORE L. PEPPERLING, D.D.S.,
ABEL J. PROSSER, D.D.S.,
JOHN G. HARPER, D.D.S.,
ORMOND H. MANHARD, D.M.D.,
HARRY D'OENCH, D.M.D.,
PETER H. EISLOEFFEL, D.D.S.,
MAX FENDLER, D.M.D.,
P. HOLM MORRISON, M.D., D.D.S.,
EDWARD SCHRANTZ, D.D.S.,
THOMAS E. TURNER, D.D.S.,
MALCOMB ROBB, D.M.D.,
WILLIAM CONRAD, D.D.S.,
FRED. H. ACHELPOHL, D.D.S.,
ADAM FLICKINGER, D.D.S.,
WILLIAM G. COX, D.D.S.

GRADUATING CLASS OF 1904.

NAMES.	ADDRESS.
Alloway, Calvert Murray	Sturgis, Ky.
Brown, Benjamin Sewall	Fort Worth, Tex.
Brown, Royal Franklin	Malta Bend, Mo.
Burcham, William Joseph	Marble Hill, Mo.
Daniel, Raymond Franklin	Farmer City, Ill.
Evans, James Wesley	St. Louis, Mo.
Field, Marshall Early	Marshall, Mo.
Gray, Erastus Gale	St. Louis, Mo.
Hirschberg, Nathan	St. Louis, Mo.
Hodgson, Edward Stith	Springfield, Ill.
Kiefaber, Leo	St. Louis, Mo.
Kissel, Bernald Leonard	Belleville, Ill.
Kunz, Valentine	St. Louis, Mo.
Lenzen, Jacob	St. Louis, Mo.
Lynott, Frank	St. Louis, Mo.
Leusley, Luther Earl	Moberly, Mo.
Northcutt, Joseph Emmett	St. Louis, Mo.
Olds, Elmer	Ashland, Mo.
Peery, James Fred	Linneus, Mo.
Pollak, Frank Joseph	St. Louis, Mo.
Rehm, Henry Simon	Ste. Genevieve, Mo.
Robinson, Robert Milton	Fulton, Mo.
Roudebush, Lloyd Fletcher	De Soto, Mo.
Rue, Harry Frank	Alton, Ill.
Schwarz, John George	Jerseyville, Ill.
Selby, Thomas Jefferson	Hardin, Ill.
Skidmore, Willard	Springfield, Mo.
Sloan, David Addison	Bloomfield, Mo.
Smart, Edmond Ellison	Logansport, La.
Smith, Julian Wright	Belleville, Ill.
Sohm, Albert Henry	Quincy, Ill.
Stockton, Loren Lamartin	Terre Haute, Ind.
Stone, Max	St. Louis, Mo.
Sturgeon, Gabriel Parker	Columbia, Mo.
Stuttle, Charles Peter	Litchfield, Ill.

NAMES.

Tellman, Joseph Gerard
 Tetley, Clarence Arthur
 Traw, Elbert Crittenden
 Trigg, Alfred, Jr.
 Tolson, Joseph Howard
 Walb, Arthur
 Walsh, Robert Emmett
 Weidlich, Harold Clarence

ADDRESS.

Marys Home, Mo.
 Farmington, Mo.
 Wet Glaze, Mo.
 St. Louis, Mo.
 Fayette, Mo.
 Darmstadt, Germany.
 Bonne Terre, Mo.
 Bridgeport, Conn.

SENIOR CLASS.

Adams, Allie Kincade
 Bailey, Alexander
 Baldwin, George Washington
 Bartel, Frederick Julius
 Biggs, James Thompson
 Blair, Francis Preston
 Blanck, Walter Henry
 Bleke, William Anthony
 Brady, Ewing Paul
 Brewington, Ernst Oscar
 Caldwell, Clyde Farley
 Carter, Fletcher Woodward
 Chaudet, Louis Stephen
 Dueber, Adolph Francis
 Dowell, Harry Eugene
 Ellenburg, Leopold Adolph
 Faherty, Harry Robert
 Gast, August Theodore
 Green, Harry Jackson
 Hafner, Theodore Frederick
 Hagemann, Henry Frederick
 Harrell, Mack Stanley
 Hayward, Joseph Dandridge
 Heidinger, Rudolph Guido
 Henry, Chester Dair
 Hodges, Charles Wesley

Mexico, Mo.
 Van Alstyne, Tex.
 Centralia, Ill.
 Belleville, Ill.
 Bowling Green, Mo.
 Bowling Green, Mo.
 Lebanon, Ill.
 Fort Wayne, Ind.
 St. Louis, Mo.
 Stamford, Tex.
 Belleville, Kan.
 Sedalia, Mo.
 Prairie du Rocher, Ill.
 St. Louis, Mo.
 Tuckerman, Ark.
 Springfield, Mo.
 St. Louis, Mo.
 St. Louis, Mo.
 West Plains, Mo.
 St. Louis, Mo.
 St. Louis, Mo.
 Celeste, Tex.
 Unionville, Mo.
 Collinsville, Ill.
 Sturgis, Ky.
 Unionville, Mo.

NAMES.	ADDRESS.
Horstman, Frederick William Theodore	St. Louis, Mo.
Hudson, Walter Lee	Newark, Mo.
Johns, Glover	San Antonio, Tex.
Kennerly, Charles Walter	St. Louis, Mo.
Kimball, Joseph Francis	Neodesha, Kan.
King, William Virgil	Dadeville, Mo.
Knepp, Charles Everett	Mexico City, Mex.
Lambrects, Emil Daumont	St. Louis, Mo.
Lehmberg, Werner Louis	Holstein, Mo.
Lence, William Hayes	Jonesboro, Ill.
Lentz, Charles Waldo	New Martinsville, W. Va.
Loneragan, John Milroy	Louisiana, Mo.
Lottes, Leo Hermann	Altenburg, Mo.
Mueller, Cornelius Bernhardt	Collinsville, Ill.
Neuhoff, Florian Adolph	Belleville, Ill.
Owsley, Harvey Betterton	Pemberville, Ohio.
Schieck, Alfred George	St. Louis, Mo.
Scott, Leslie Elmore	Boonville, Mo.
Seibert, Rudolph Charles	Mascoutah, Ill.
Sharp, Edward Earl	Marshall, Mo.
Shields, Romie Brent	Fayette, Mo.
Sievert, Carl Frederick	St. Louis, Mo.
Spencer, Walter Scott	St. Louis, Mo.
Spiller, Otto Eades, M.D.	Malden, Mo.
Steinman, Robert Olean	Grafton, Ill.
Sugg, Thomas Jacob	St. Louis, Mo.
Trail, Edgar Bradley	New Haven, Mo.
Umbarger, Thomas Tucker	Marshall, Mo.
Villars, Roy Temple	Gas City, Ind.
Wallis, Robert	Lebanon, Ill.
Watson, George Fountain	New London, Mo.
Weber, Harry Brady	Farmington, Mo.
Westerfeld, August	St. Charles, Mo.
William, Rolla Glassford	Boles, Ill.
Wolff, Joseph Scott	St. Louis, Mo.

Total, 61.

JUNIOR CLASS.

NAMES.	ADDRESS.
Adams, Edward Rothwell	Missouri.
Alcorn, James Floyd	Michigan.
Bischoff, Julius, Jr.	Illinois.
Cleveland, Laurence Clayton	Missouri.
Courtney, Warner Ford	Kansas.
Dills, Joseph Lester	Missouri.
Dresser, Harold	Minnesota.
Engvall, Charles Oscar	Missouri.
Enright, George Michael	Wisconsin.
Frost, Aubrey Ward	Missouri.
Harris, Robert Alexander	Kansas.
Herbert, Charles	Missouri.
Hewlett, Judson Hugh	Missouri.
Jordan, John Dawson	Arkansas.
Kock, William Edward	Missouri.
Long, Clement Robert	Missouri.
Lynott, Nicholas Joseph	Missouri.
Mateo, Gregorio R.	Philippine Islands.
May, Claud Eugene	Arkansas.
Merck, Herman Frederick	Illinois.
Parcell, Edward Leeroy	Illinois.
Schlaeger, Roy Bullen	Indiana.
Takvorian, Bedros Hagop	India.
Titterington, Richard M.	Missouri.

Total, 24.

FRESHMAN CLASS.

Adams, Samuel Thompson	Missouri.
Baker, George Sherwood	Missouri.
Baird, Homer George	Illinois.
Bennett, Berrimon Floyd	Illinois.

NAMES.	ADDRESS.
Bolt, Henry Brison	Arkansas.
Byrne, George Martin	Nebraska.
Carson, Edgar Mason	Missouri.
Crisp, Joe Shelby	Missouri.
Gessel, Michael	Missouri.
Grodski, Anthony John	Missouri.
Holloway, Robert Norris	Texas.
Hudson, Samuel Cleveland	Missouri.
Hunt, Walter Lucius	Missouri.
Hoevel, Hugo Harry, Ph.G.	Missouri.
Johnson, Claud White	Missouri.
Kalbfleisch, Albert Arthur	Missouri.
Keys, Edgar Hayden	Pennsylvania.
Lee, Howard W.	Missouri.
Logan, John Cadesman	Arkansas.
Logue, Earl Jesse	Iowa.
Lynott, Charles Emmet	Missouri.
Mayer, Ernst L.	Missouri.
Neville, Henry Olen	Missouri.
Patterson, Herbert William	Illinois.
Peak, William Ennis	Illinois.
Peters, Guy	Illinois.
Rice, James Orville	Illinois.
Scheu, George M.	Missouri.
Schroeder, Paul Ferdinand	Missouri.
Smith, William Rector	Missouri.
Stephens, J. W.	Arkansas.
Sternberg, Irvin	Arkansas.
Sunderland, Jett Heagle	Illinois.
Tice, Arthur LeVega	Missouri.
Thornburgh, Fred Edgar	Missouri.
Wavrin, James Vincent	Iowa.
Weber, Rudolph	Missouri.
West, Sterling C.	Missouri.
Wieser, Charles Edward	Missouri.
Will, Edwin Christian	Missouri.
Winters, Meade Ellis	Illinois.

REQUIREMENTS FOR ADMISSION.

The following preliminary examination shall be required of students seeking admission to this Institution:

"The minimum preliminary educational requirement of this Department for the session of 1905-1906 shall be a certificate of entrance into the fourth year of a high school, or its equivalent. The preliminary examination to be placed in the hands of the State Superintendent of Public Instruction.

"Attendance upon three courses of not less than thirty weeks of six days each in each of three separate academic years shall be required before examination for graduation of all students matriculating for the sessions of 1903-4, 1904-5."

Students who have attended courses of lectures in other accredited schools of Dentistry, *whose entrance requirements correspond to those established by the National Association of Dental Faculties and National Association of Dental Examiners*, will be received into the Junior and Senior classes upon the presentation of certificates that they have passed examinations in the studies of the Freshman and Junior grades respectively.

Such certificates are granted to any student after the satisfactory completion of a given course of study and are recognized as pledges to any college of the Association of Dental Faculties to whom the holder may apply, that the stated number of terms have been spent in the institution by which the certificates are issued.

**STANDING OF STUDENTS HOLDING CERTIFICATES
FROM DENTAL COLLEGES IN FOREIGN
COUNTRIES.**

Persons holding certificates from colleges of dentistry in foreign countries shall be required to furnish properly attested evidence of study, attendance upon lectures, examinations passed satisfactorily, etc., the same as required of students coming from our own institutions.

ADMISSION OF GRADUATES OF MEDICINE.

A diploma from a reputable medical college may entitle the holder to enter the Junior class, and he may be excused from attendance upon the lectures and examinations in general anatomy, chemistry, physiology, materia medica and therapeutics.

ADMISSION AND CLASSIFICATION OF STUDENTS.

Students of all classes are required to register at the beginning of each session at the College Building with the Dean.

No student of any class will be registered after the tenth day of the session.

Students will be designated as belonging to the Freshman, Junior or Senior class.

SCHEDULE OF STUDIES.

FIRST YEAR.

Subjects completed
the First Year.

{ Dental Anatomy.
Anatomy with Dissection.
Histology.
Chemistry.
Operative and Prosthetic Technics.
Physics.

SECOND YEAR.

Subjects Completed
the Second Year.

{ Metallurgy.
Materia Medica and Pharmacy.
Physiology.

Subjects Taken Sec-
ond Year and Con-
tinued during
Third Year.

{ Operative Dentistry.
Prosthetic Dentistry.
Crown and Bridge Work.
Embryology and Pathology.

THIRD YEAR.

Subjects Completed
the Third Year.

{ Oral and Clinical Surgery.
Operative Dentistry.
Prosthetic Dentistry.
Crown and Bridge Work.
Embryology and Pathology.
Orthodontia.
Dental Medicine and Bacteriology.
Dental Jurisprudence.

INFIRMARY.

This Department is justly considered of the greatest practical importance. It is here the student must, by the experience gained in actual practice upon patients, lay the foundation for operative skill in his profession. For this work the greater portion of three separate floors, 50x135 feet, have been set aside. The first of

these having a general office, with clerk and assistants constantly in charge to receive patients; a room for extracting teeth, supplied with appliances for the administration of the various anaesthetics used in dentistry. The remaining space of this floor is used for the Operatory, Crown and Bridge Work, light laboratory work and taking impressions. The remaining floors are used for laboratories, and are fitted out with the most modern apparatus for teaching all departments of Prosthetic Dentistry.

OPERATIVE TECHNIQS.

The student is trained in handling the instruments required in operations upon the teeth, their proper naming and the preparation of cavities. A study is made of the materials in use for filling teeth and practice in the preparation and insertion of them; of the treatment, preparation and filling of root canals, for which natural teeth will be set in convenient forms; enlarged drawings of vertical and cross-sections of the dental arches, showing the points of contact and interproximal spaces; of the carving of teeth in ivory, using natural teeth as models, thus affording the student every opportunity of manipulative and æsthetic training, and the acquirement of habits of order and individual observation.

PROSTHETIC TECHNIQS.

The student is trained in taking impressions of the mouth and the practical use of all the materials employed for that purpose, the making and repairing of vulcanite plates, making dies, swaging plates, and backing and soldering teeth.

A list of instruments will be furnished the student at the beginning of the term. Those for the Operative

Technics cost about \$15. Those for the Prosthetic Technics cost about \$18. These instruments will be needed subsequently for work in the infirmary and laboratory, and are required before the student begins class work.

LIBRARY.

The recent purchase by the University of the Dr. H. J. McKellops Library for the Dental Department gives the students of this Department access to the most complete collection of literature in existence upon dentistry and kindred subjects.

REQUISITES FOR THE DEGREE OF DOCTOR OF DENTAL SURGERY.

The candidate for graduation must be twenty-one years of age, and must possess a good moral character, *which includes good deportment while a student in this Department.*

He must have attended three regular annual courses (no two courses of which shall have been taken during the same year) of dental instruction, the last of which must have been the Senior Course of this College.

He must treat thoroughly patients, requiring all the usual dental operations, and under the eye of the Demonstrator, or Superintendent of the Infirmary, construct practical artificial cases. He must undergo a satisfactory examination in all the branches taught in the College and conform to the rules and regulations of the Infirmary.

CO-OPERATIVE ASSOCIATION.

A Co-Operative Association, of which students are advised to become members, was started in September, 1901. The membership fee is \$1.00. This entitles

members to purchase at a discount supplies from several stores in St. Louis. There is also a supply store at the Locust street building, where books, stationery, microscope supplies, etc., are sold. Anybody may purchase supplies at this store, but at the end of the year members are given a dividend based upon the total amount of their purchases.

FEEES.

Tuition, each session.....\$120 00

No charge for final examination or diploma.

If the National Association of Dental Faculties adopts a pending resolution, the fee will be \$150.00

The entire fee is due and must be paid at the beginning of each session.

TEXT-BOOKS.

LATEST EDITIONS ONLY.

Text-Books used by the Freshman Class which must be secured at the beginning of the term:—

<i>Anatomy</i> —GRAY	\$ 6 00
<i>Dental Anatomy and Histology</i> —BROMELL, 2d Ed....	4 50
<i>Dissector</i> —HOLDEN'S, 7th Ed., 2 Vol.....	3 00
<i>Chemistry</i> —REMSON'S BRIEFER COURSE.....	1 20
<i>General Histology</i> —FROM KIRK'S PHYSIOLOGY.....	3 00
<i>Operative Technics</i> —JOHNSON.....	2 50
<i>Prosthetic Dentistry</i> —ESSIG'S.....	6 00
	\$25 70

Text-Books used by the Junior Class:—

<i>Metallurgy</i> —HODGEN's, 2d Ed.....	\$ 2 50
<i>Physiology</i> —KIRK's	3 00
<i>Operative Dentistry</i> —KIRK	6 00
<i>Prosthetic Dentistry</i> —ESSIG.....	6 00
<i>Crown and Bridge Work</i> —EVAN's.....	3 00
	\$20 50 .

Text-Books required in Elective Course in Chemistry:—

<i>Qualitative Analysis</i> —Lecture Notes in Qualitative Analysis by Hill.....	\$0 75
<i>Organic Chemistry</i> —REMSON's Chemistry of the Compounds of Carbon.....	1 20
	\$1 95

Text-Books used by the Senior Class:—

<i>Oral Surgery</i> —MARSHALL's.....	\$6 00
<i>Operative Dentistry</i> —KIRK's.....	6 00
<i>Prosthetic Dentistry</i> —ESSIG's.....	6 00
<i>Crown and Bridge Work</i> —EVAN's.....	3 00
<i>Dental Medicine</i> —GORGAS.....	4 00
<i>Dental Jurisprudence</i> —REHFUSS.....	
<i>Dental Pathology</i>	
<i>Orthodontia</i> —MCDOWELL	4 00

Dental Bacteriology—Miller's Micro-Organisms of the Human Mouth; Abbott's Principles of Bacteriology.

Books of Reference—American System of Dentistry; Harris' Dental Dictionary; Garretson or Tomes Dental Surgery; Newth's Inorganic Chemistry; Simon—Manual of Chemistry; Talbot—Irrregularities of the Teeth; Eames—Dental Medicine.

SUMMARY OF GRADUATES.

College	307
School of Engineering.....	230
Law School	881
Medical Department	5,359
Dental Department	592
Honorary Graduates	20
	7,389

GENERAL SUMMARY.

	1903-4		1904-5	
	Stu.	Instr.	Stu.	Instr.
College and School of Engineering.....	259	36	281	39
Law School	123	14	111	14
Medical Department	276	64	260	75
Dental Department	133	19	126	25
Total Graduate and Undergraduate Departments	791	133	778	153

PREPARATORY SCHOOLS.

Smith Academy	327	22	313	23
Mary Institute	454	32	468	33
Manual Training School.....	328	16	257	15
	1,109	70	1,038	71
Total Graduate, Undergraduate and Preparatory Departments.....	1,900	203	1,816	224
School of Fine Arts.....	366	12	311	12
	2,266	215	2,127	236
Deduct for Names Counted Twice.....		6		6
Total Connected with the University..	2,266	209	2,127	230

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Vice-President: GRANT BEEBE.
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Corresponding Secretary: CHARLES P. PETTUS.
Treasurer: ALEXANDER S. LANGSDORF.
Executive Committee: LOUIS A. BENECKE, THOMAS G. RUTLEDGE,
GRANT BEEBE, EVERETT P. GRIFFIN, CHARLES P. PETTUS, ALEX-
ANDER S. LANGSDORF.

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